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Philadelphia, Pa., U. S. A.

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CATALOGUE

OF

Roofing, Siding, Cornices and Ridging

Metal Lath, Brick, Rock Faced Shingles



THE PENN METAL CEILING AND ROOFING CO.
LIMITED

Hamilton and Twenty-third Streets, Philadelphia, Pa., U. S. A.

GEO. A. SAGENDORPH, Manager

Boston Factory, 559 Atlantic Ave., Boston, Mass.

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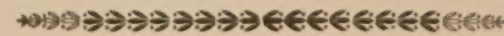
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TERMS AND IMPORTANT NOTES



Rules of Measurement

In Selling Sheet Metal Building Material

ALL Steel Roofing, Siding, Ceiling, etc., except Galvanized material, is painted both sides, unless otherwise ordered.

All Steel Roofing, Siding and Ceiling, are sold by the square (100 square feet.)

A SQUARE consists of 100 square feet, and is calculated by the following rules of measurement:

Corrugated Sheets and Imitation Brick.—The full width and length of sheets, after being corrugated or formed, is calculated.

V Crimped and Beaded.—The full length of sheets together with the actual covering width is calculated.

Standing Seam Steel Roofing.—The actual covering width and full length is calculated.

Roll and Cap and Roll Steel.—One square of Roll and Cap or Roll Roofing consists of six and one-quarter Sheets 26 inches x 96 inches double locked and swedged together, or its equivalent, to every Roll.

Cluster Steel Shingles.—One square of Steel Shingles consists of 50 lineal feet 24 inches wide, or its equivalent. Each Sheet measures in the clear (allowing side laps) 24 inches by 96 inches, or its equivalent, painted both sides, provided with 1-inch flat margin, Pressed Standing Seams, or Double Beaded Edges at sides of Sheets.

Flat Material for Gutters and Valleys.—The full width and length of material is calculated.

Nails, Wood Strips, Dry Paint and Ready Mixed Paints, are sold by the pound, gallon or square (the amount generally required in applying a square). They are not included in the price quoted on the Manufactured Sheets, but are charged as separate items when furnished.

Corrugated Ridge Roll or Flashing, Ridge Cap, Corrugated Wood Strips, Corner Boards, Panel Strips, Window and Door Case Coverings, Mouldings, Stylings, Eave Troughs, Conductor Pipes, Etc., are sold by the lineal foot, and not included in prices quoted on Sheet Manufactured, but when furnished are charged separately.

We do not sell at wholesale prices and measure the roof after it is laid, but give you prices on these goods in quantities as stated; and if they are short when received, we will cheerfully make up the loss, but in no instance will we make the allowance after the same has been used, and by some mismanagement the workman fails to cover all that the buyer would wish. So

please bear this in mind, and upon the receipt of the goods, see that it tallies with our list on invoice.

EXTRAS

Nails, Dry Paint, Lead Washers and Wood Strips, when ordered with Roofing, are furnished at current prices.

To parties having a commercial rating that will warrant credit, net cash 30 days, one per cent discount for cash in ten days from date of Invoice.

When credit is not established, net cash, settlements by Sight Draft attached to Bill of Lading.

Remittances must be made in New York Exchange or its equivalent.

Bills not paid at maturity subject to Sight Draft without further notice.

Claims for errors must be made upon receipt of goods.

Quotations are subject to change without notice, and all orders are accepted subject to strikes, accidents, and other delays beyond our control.

NOTE:—All orders sent us without previous quotations will be shipped at our regular prices, which will be as low as if quoted before receiving the order.

RESPONSIBILITIES OF COMMON CARRIERS

We wish to say a few words relative to the responsibility of Common Carriers, for damage to goods, as well as delay in transportation.

If goods are ordered to be shipped by freight, express, etc., and the seller delivers the goods to be shipped, taking a receipt or Bill of Lading from said carrier or agent, stating that the goods were received in good condition, the responsibility of the shipper ceases.

If such goods are detained beyond a reasonable length of time, or are damaged by the carelessness of employees, etc., the carrier is liable. But the *buyer*, only, can bring suit, as the seller lost ownership at the time he delivered the goods and took receipt above mentioned. If this fact was fully understood, considerable correspondence and worry would be saved.

A great wrong is committed by a buyer of goods to refuse to take goods and pay for them because they do not reach him promptly, or arrive in a damaged condition when he is aware of the fact, that they were shipped in good order by the seller, per his instructions.

Bear in mind, that goods shipped as directed, and in good order, as per evidence of bill of lading, are at the risk of the buyer.

ORDER SHEET TO BE FILLED OUT AND SENT WITH ORDER

Be careful to state just what you want.
 Fill out the proper diagram with accurate dimensions. Accuracy is of the greatest importance.
 The customer must be responsible for the correctness of his figures and drawings.
 If you want us to cut siding to fit, provide drawings showing the

distances from corners to openings, between openings, below and above openings, and the sizes of openings.

Unavoidable waste in cutting material to dimensions is invariably charged at full price, and labor added.

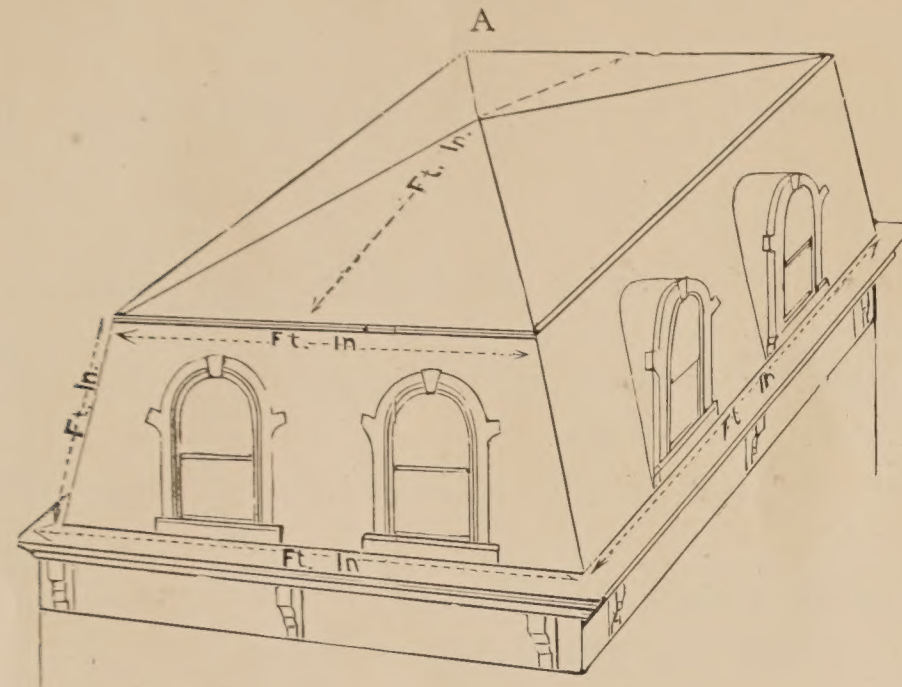
In ordering roofing state whether or not you have made the necessary allowances for turn down or projection (as the case may

be) at eaves, and for side laps on sheets, or if you wish us to add them to your figures.

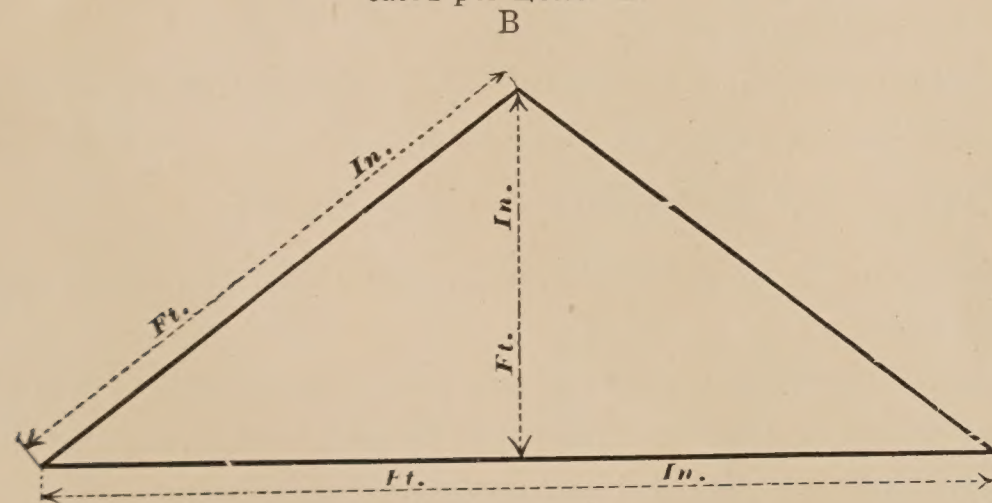
For a RIDGE ROOF AND SIDING for such buildings, fill out as indicated.

HOW TO ORDER ROOFING AND SIDING

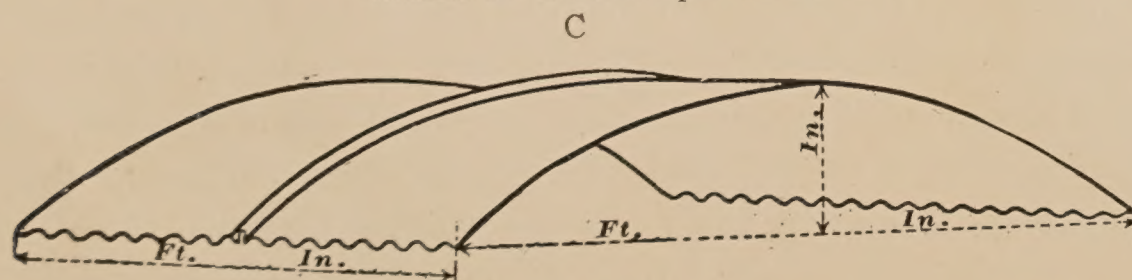
For Mansard Roof, furnish us the dimensions as indicated per Letter A. For Hip Roof Building and Siding, furnish us the dimensions as indicated per Letter D.



For Gable Roof Building and Siding, furnish us dimensions as indicated per Letter B.

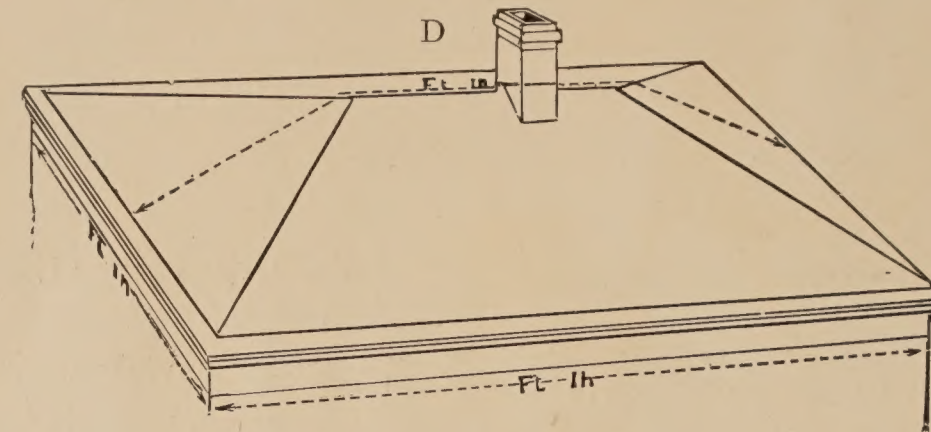


For Curved Sheets, always state whether for Roofing or Ceiling, and furnish as indicated per Letter C.

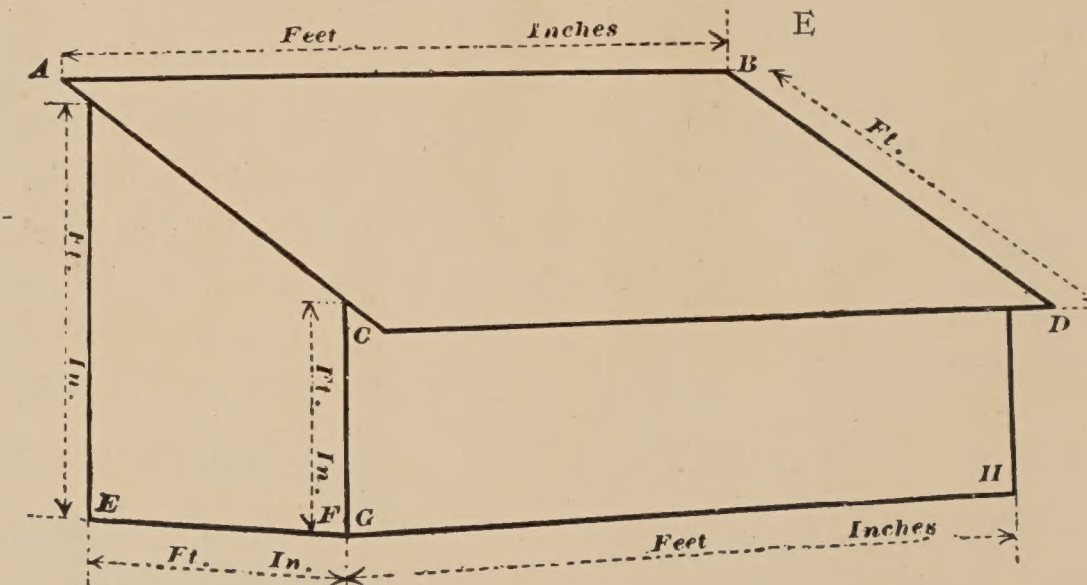


Allow for projections, if for Roofing. If for ceilings, make base line from $\frac{1}{4}$ to $\frac{3}{8}$ less than distance between webs and I Beams, etc.; when shoes are used, state thickness of Iron used in same, and give sketch of section of shoe, and, if so, width of same.

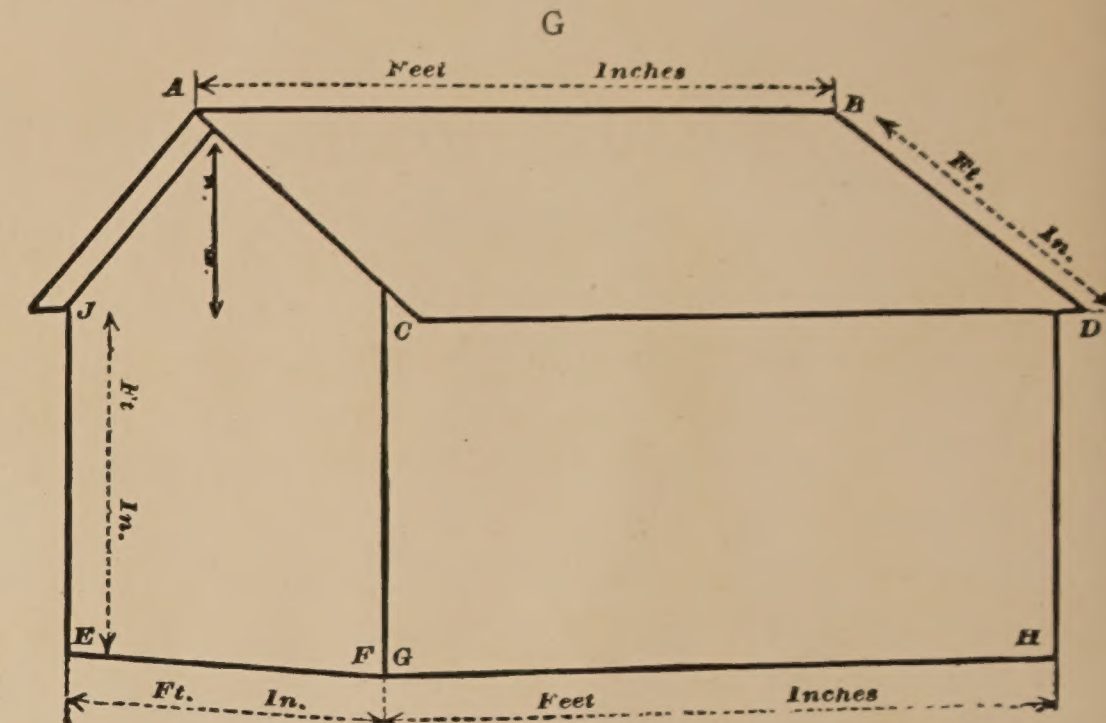
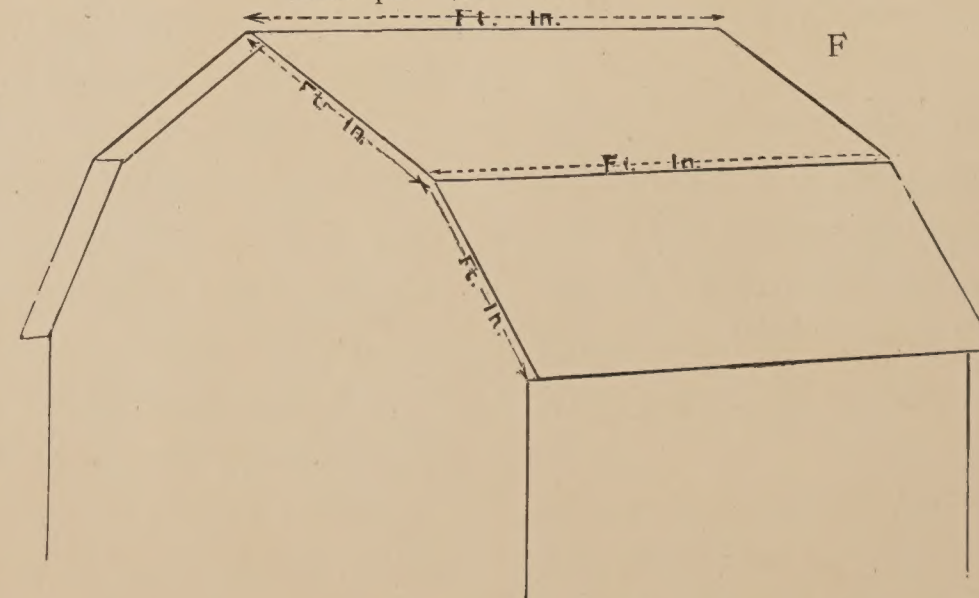
It is an ART to take a correct Measure, and another to EXECUTE the same ACCURATELY



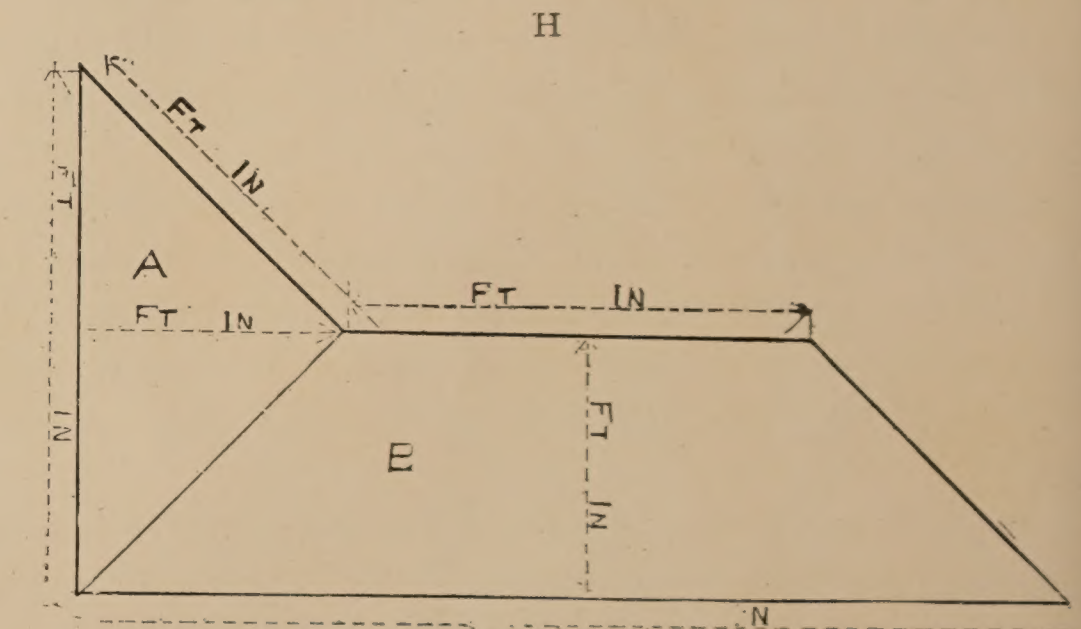
For Shed Roof Building and Siding, furnish us the dimensions as indicated per Letter E.



For Curb Roof Building and Siding, furnish us dimensions as indicated per Letter F.



For Gables, furnish us the dimensions as indicated per Letter G.



For Hips and Valley Roof with Ridge. Letter H.

These rules must be followed, and no trouble will arise from short shipments or miscalculations. It takes so much Roofing material to cover a certain space, and parties only deceive themselves by not allowing enough to complete the work.

After making measurement from out to out, either for Roofing, Siding or Ceiling, add 10 per cent. for corners, laps, turning over and side and end fastenings over barge boards, or up against parapet walls, ridge combs, etc. This will always insure enough material to cover space mentioned.

Note! All Our Black Sheet Goods are Painted on Both Sides,
before Shipping, if not otherwise Specified

GALVANIZED SHEETS

PAINTED ONLY WHEN REQUESTED BY PURCHASER, AT EXTRA CHARGE

GALVANIZED SHEETS			
Wire Gauge	WEIGHT		LIST PRICE
	Per Square Foot		Per Pound
28	About 12½ oz.	In the flat, 17 cts.	
27	" 13½ "	" "	16 "
26	" 14½ "	" "	15 "
24	" 18½ "	" "	14 "
22	" 22½ "	" "	13 "
20	" 26½ "	" "	13 "
18	" 34½ "	" "	13 "
16	" 42½ "	" "	12 "

Subject to the trade discount

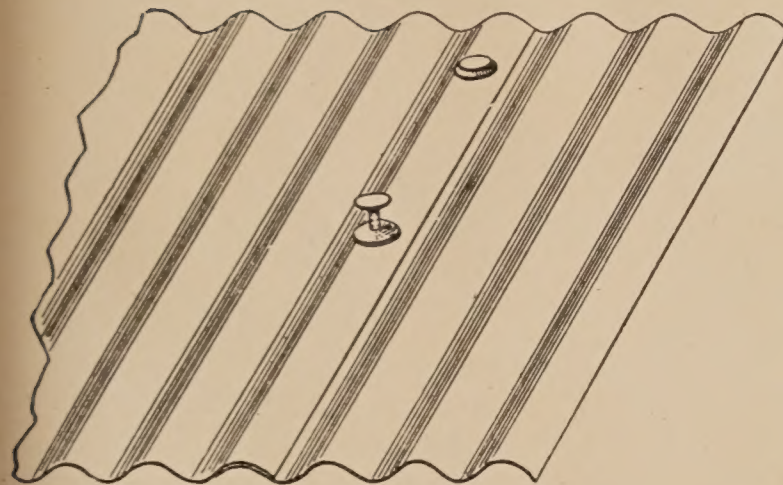
AMERICAN GAUGE			
WEIGHT OF BLACK SHEET STEEL			
Per 100 Square Feet Flat			
No. Wire Gauge	Lbs.	No. Wire Gauge	Lbs.
16	250	24	100
18	200	26	75
20	150	28	62½
22	125	29	56¼

We keep in stock from 28 to 18 American Gauge, in Widths of 26 inches to 30 inches; Lengths of 1 foot to 10 feet
Either Black, Painted or Galvanized. We sell Manufactured Roofing Products by the square (10 x 10)

LEAD WASHERS

Used when putting on Roofing and Siding, Corrugated V Crimped, or Cluster Shingles as shown in the cut below, will prevent leaks.

Fig. 1

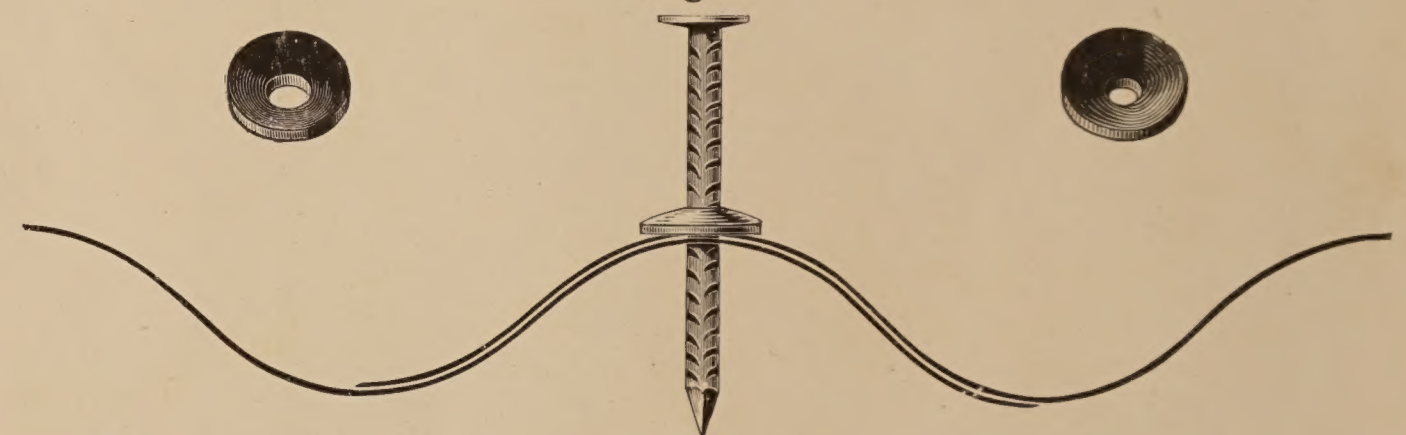


The illustration above shows the application of our Lead Washer to Corrugated Iron Roofing and Siding. The advantage in using same is that it makes an absolutely water-tight joint, prevents leaking and rusting at the nail hole, thereby prolonging the life of a roof. Send for samples and special prices.

No. 12, for Small Nails.



Fig. 2



No Corrugated V Crimped or Cluster Shingle Roofing should be laid without using Lead Washers.

These Washers make an ABSOLUTELY WATER-TIGHT JOINT on any surface, whether concave, convex or flat; they also PREVENT RUST below the nail-head and the head from cutting into the sheet, thus making a more durable job.

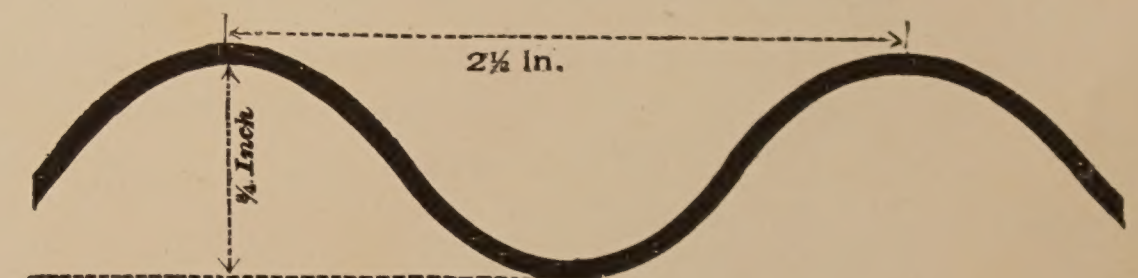
One pound contains 325 Washers, and will put on 2 to 3 squares.

GALVANIZED

WEIGHT AFTER CORRUGATING	
Wire Gauge	Per 100 Square Feet
28	About 83 pounds
27	" 93½ "
26	" 99 "
24	" 127 "
22	" 150 "
20	" 184 "
18	" 236 "
16	" 297 "



Shows fac-simile of a 1¼x⅜ inch Corrugation.

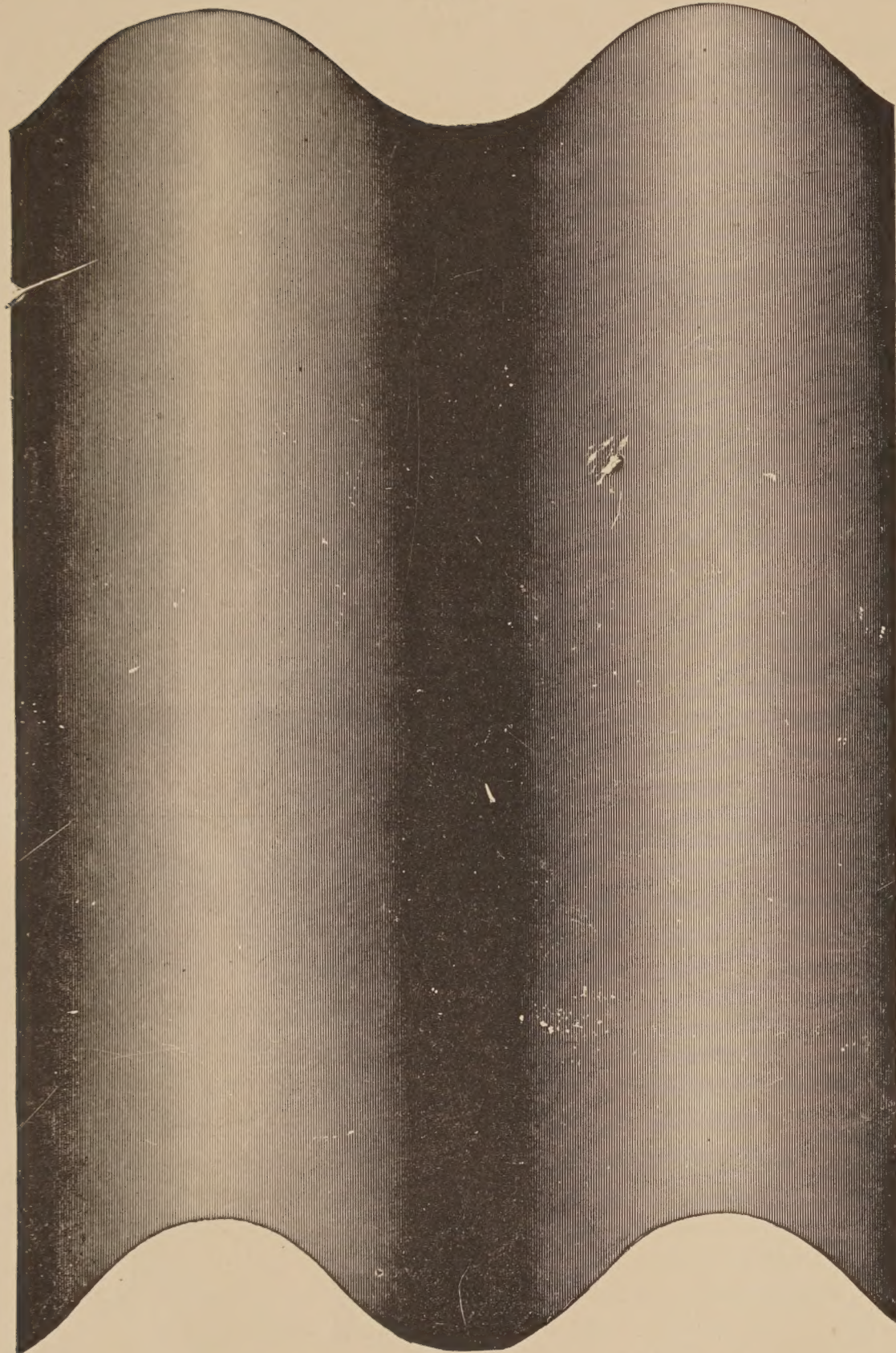


Shows fac-simile of a 2½x⅝ inch Corrugation.

CORRUGATED SHEETS, PAINTED OR GALVANIZED—(American Gauge) No. 28 to 18 Gauge

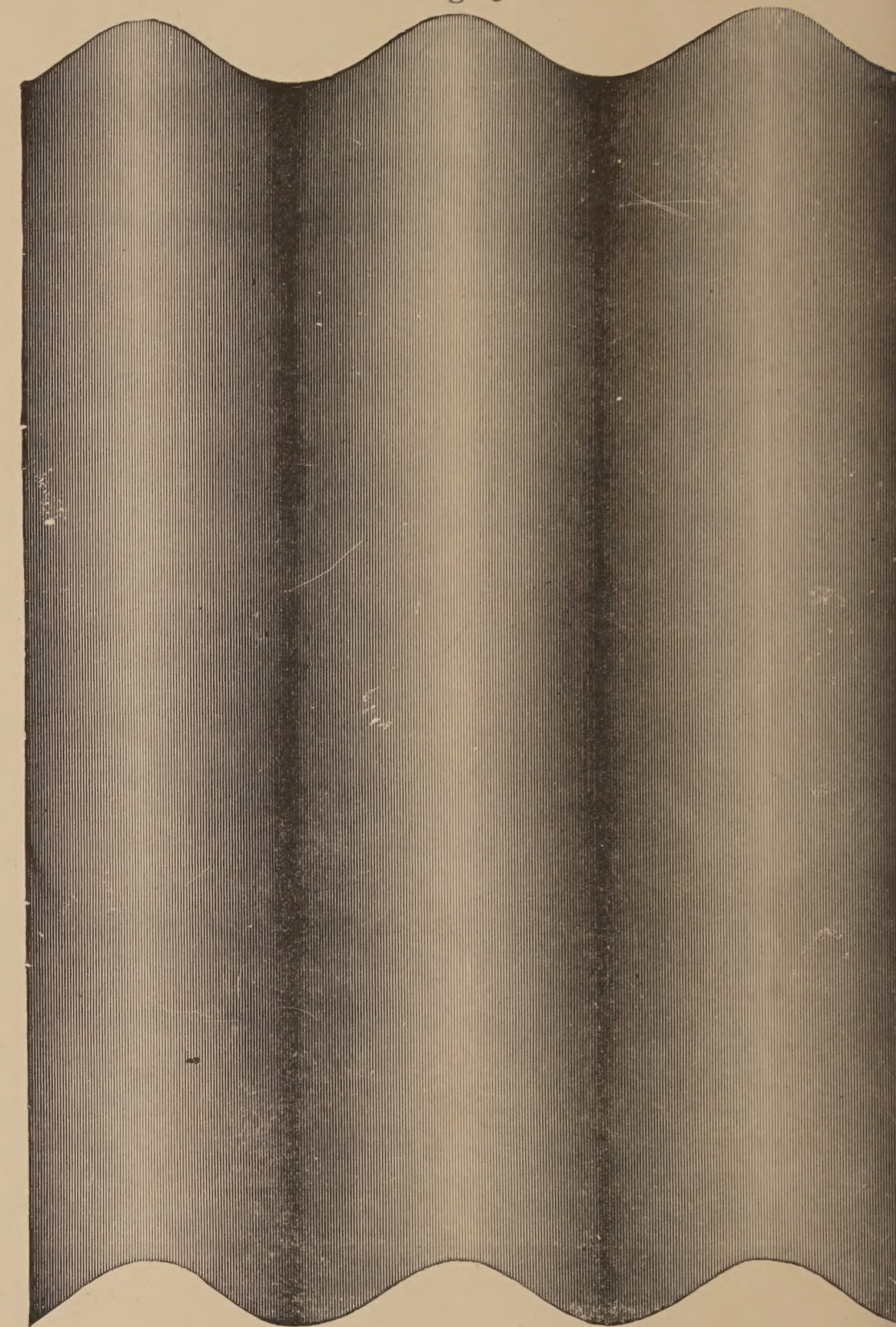
Length 5 to 10 feet; outside width after corrugating, 26 inches

Fig. 4



Full size, 2 1/2-inch centre, corrugated sheets. Stock sheets 26 inches wide after corrugating. Length, 1 to 10 feet.

Fig. 5



Full size, 1 1/4-inch corrugated sheets. 26 inches wide by 5 to 10 feet long.



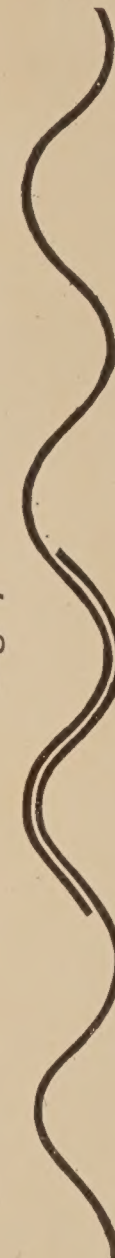
Full size sectional view, 2 1/2-inch centre.
SIDE LAP FOR CORRUGATED ROOF
Fig. 6



For roofing, we recommend that one and one-half corrugates be used for side lap. When laid this way the covering of sheet will be 1/2 corrugate less. The width required for this lap is not kept in stock, but must be made to order. On regular stock sheets to obtain 1 1/2 corrugated side lap, each alternate sheet can be turned upside down and applied like Fig. 6 with same result. When one corrugation only is used for side lap the roof may leak.

Use three or four inches, according to pitch, for end lap.

FOR SIDING OR ROOFING WITH ONE CORRUGATION LAP
Fig. 7



When used for siding one or two inches should be used for end lap, and one corrugate for side lap, as shown in Fig. 7.

We furnish 11 or 12 feet sheets at extra cost when requested.

WEIGHT PER 100 SQUARE FEET CORRUGATED SURFACE—AMERICAN GAUGE (SHIPPING WEIGHT)

PAINTED STOCK	
28 Gauge	70 pounds
26 "	83 "
24 "	111 "
22 Gauge	138 pounds
20 "	165 "
18 "	220 "
16 "	275 "

GALVANIZED STOCK	
28 Gauge	83 pounds
27 "	93 "
26 "	99 "
24 "	127 "

GALVANIZED STOCK	
22 Gauge	154 pounds
20 "	185 "
18 "	237 "
16 "	297 "



Full size sectional view, 1 1/4-inch centres. 26 inches wide. Lays to weather, after lapping one corrugation, 24 inches.

Corrugated sheets for Elevators, size 26 to 32 inches, 2 1/2 or 1 1/4 inch corrugation. 18 to 28 Gauge, Painted or Galvanized

CORRUGATED SHEETS, PAINTED OR GALVANIZED

(American Gauge) Numbers 28 to 24

Length 5 to 8 feet. Outside width after corrugating, 26 inches. Made crosswise of sheets, the take-up is about 1 1-4 inches to the lineal foot

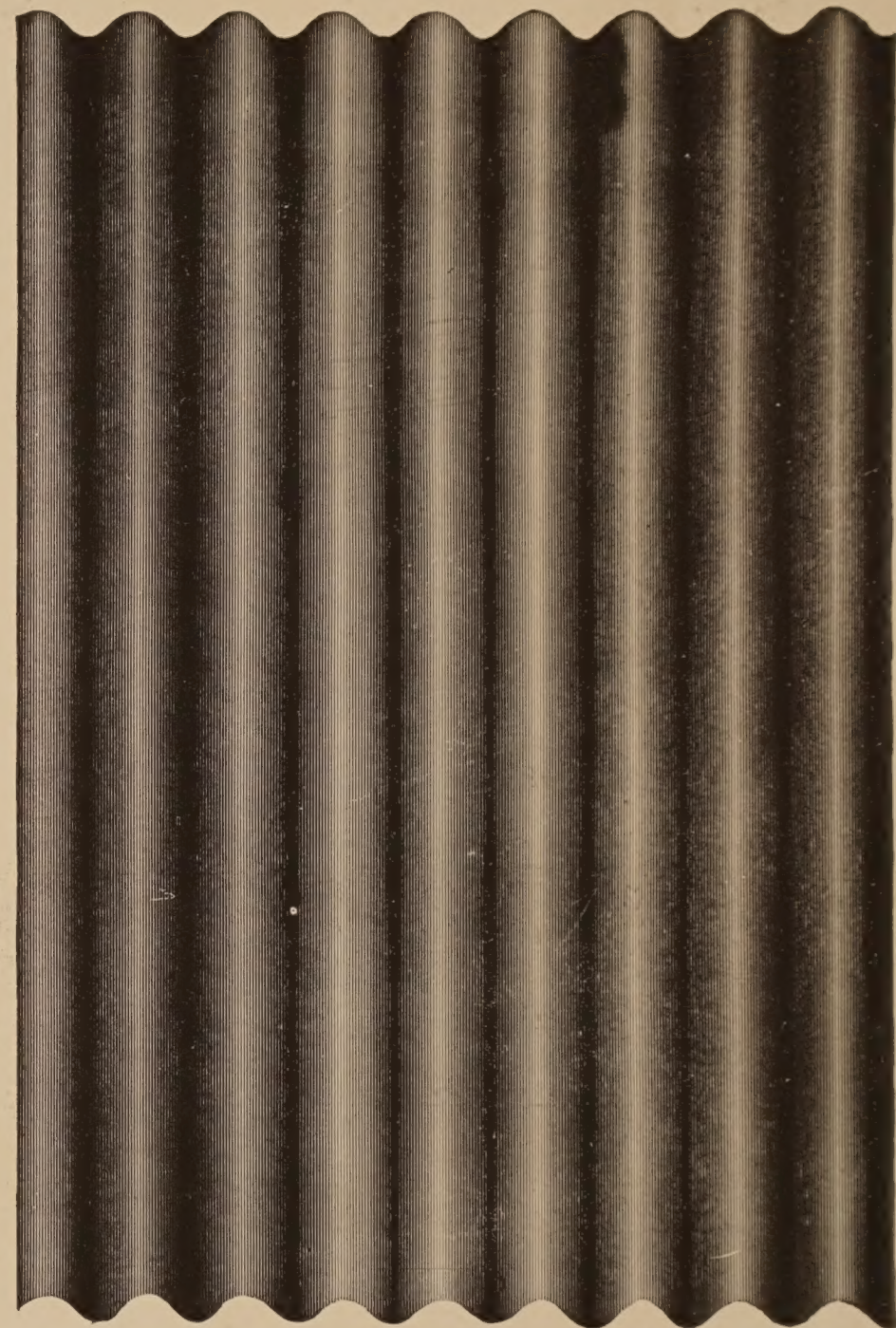
Fig. 8



Full size sectional view; 5/8-inch centres.



Fig. 9



Full size sectional view; 3/8-inch centre, corrugated.



Full size, 3/8-inch centre, corrugated sheets. 26 inches wide by 1 to 6 feet long. No heavier than 24 gauge made.

Full size, 5/8-inch centre, corrugated sheets. Length, 1 to 8 feet; outside width, 26 inches after corrugating. No heavier than 22 gauge corrugated.

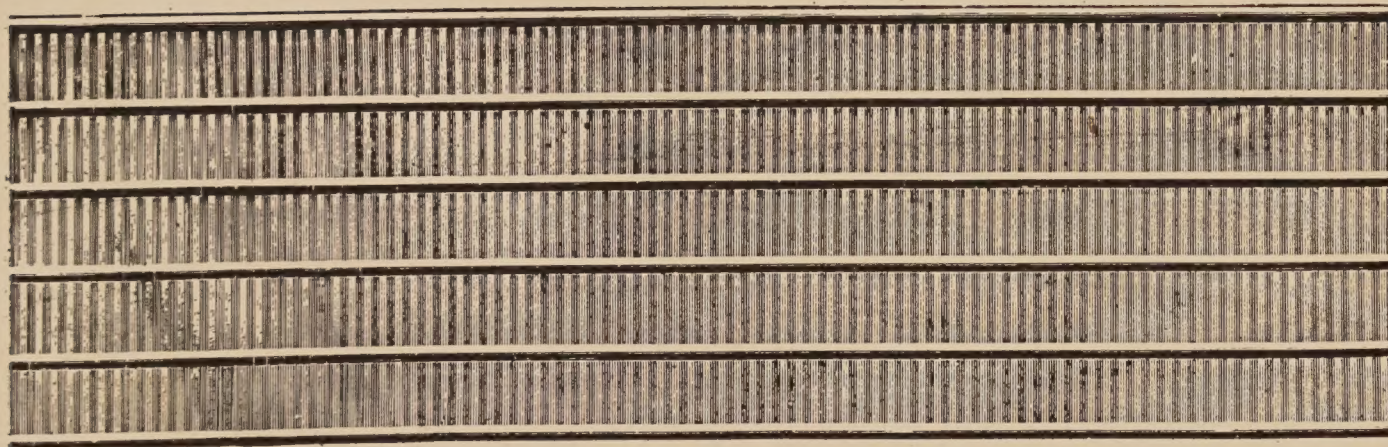
Fig. 10



Full sheet of Plain Beaded Steel, 24 x 96 inches.

For neat and cheap inside or outside finish on most any style of a building, our beaded sheets have given entire satisfaction. Fig. 10 is generally used for siding, and Fig. 11 for ceiling and side wall finish.

Fig. 11



Sheets 8 feet long by 24 inches wide. Beads 3 inches from center to center.

The above cut shows our new 3-16 cross beaded iron or steel used for ceiling or siding.

Fig. 12

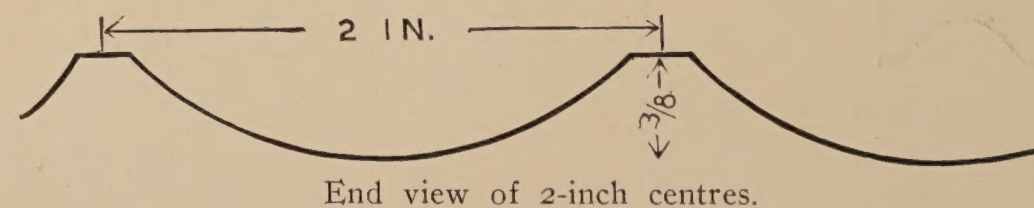
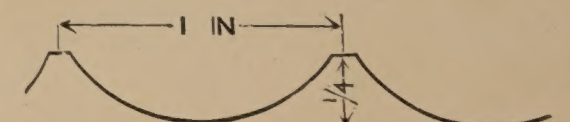


Fig. 13



End view of 1-inch centres.
Shows full sheet, 25 inches wide by 10 feet long;
1 and 2-inch centres from crown to crown.

1-inch centre; sheets, 25 inches wide by 4 to 10 feet long.

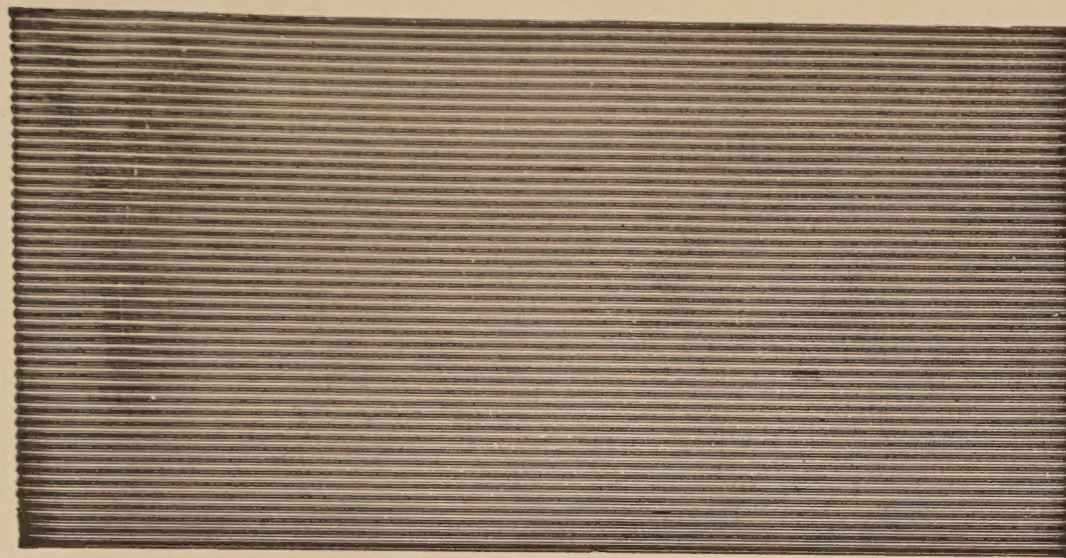
COPPER AND ZINC SHEETS, REEDED

The take-up in corrugating or reeding is about $1\frac{1}{4}$ inches to the lineal foot

Made in three sizes of reeds, viz.

$\left\{ \begin{array}{l} 5-8 \\ 8 \text{ feet or less} \end{array} \right.$	$\left\{ \begin{array}{l} 3-8 \\ 6 \text{ feet or less} \end{array} \right.$	$\left\{ \begin{array}{l} 3-16 \\ 10 \text{ feet or less} \end{array} \right.$
		$\left\{ \begin{array}{l} \text{Center of reeds, crosswise} \\ \text{or lengthwise} \end{array} \right.$

Fig. 14



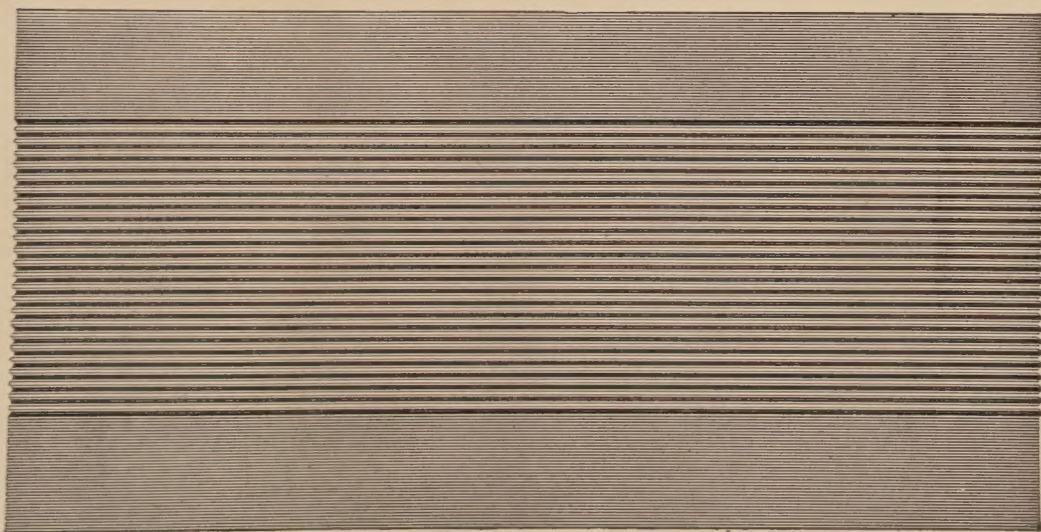
Shows $\frac{3}{8}$ corrugation, lengthwise, 26 inches wide by 6 feet long.

Fig. 15



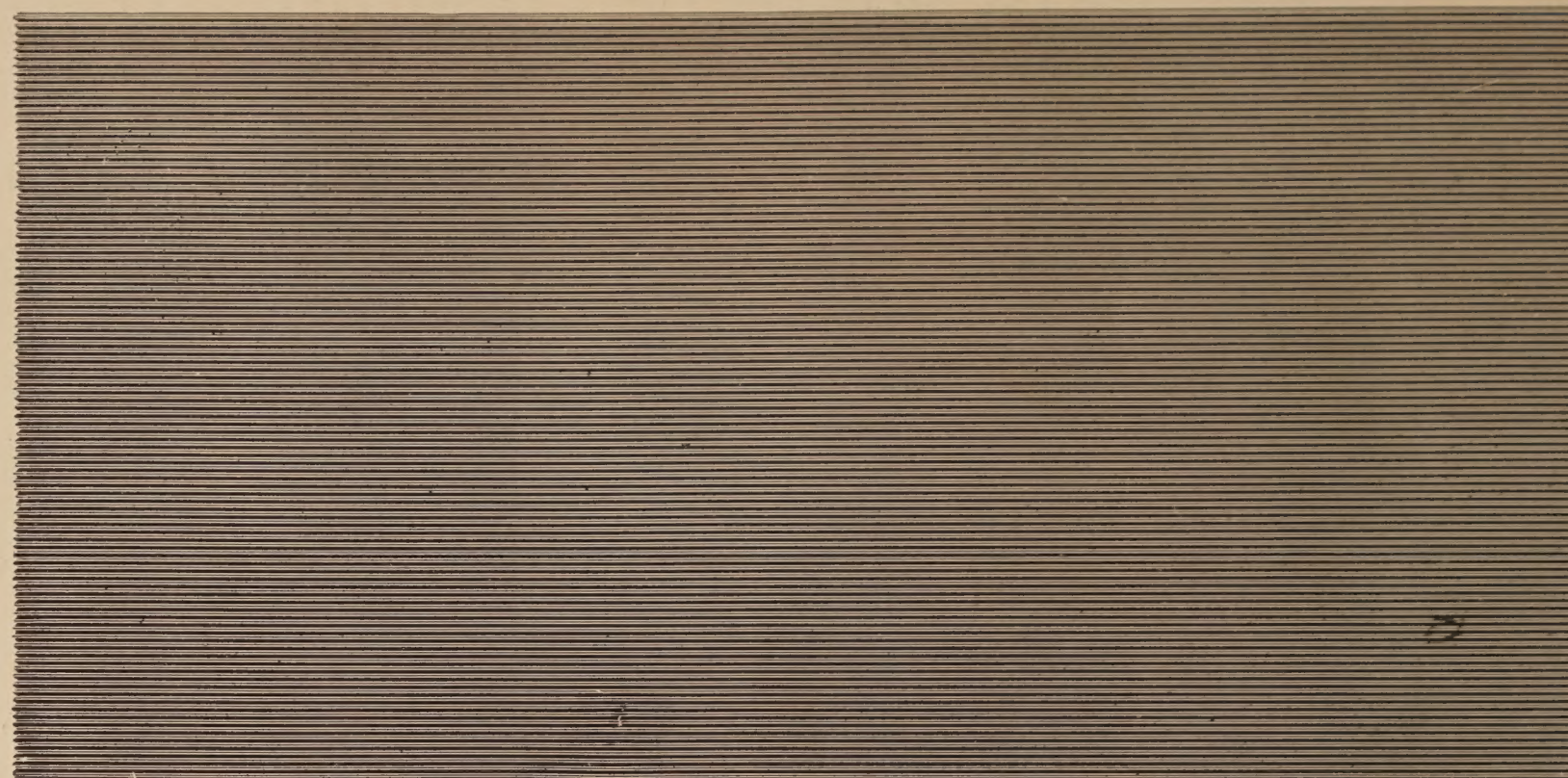
3/8-inch corrugated Sheet reeded with one flat edge margin.

Fig. 16



3/8-inch corrugated Sheet reeded with both outside edges left flat.

Fig. 17



3-16 centres, 4 to 10 feet long; 20 to 30 inches from out to out.

Crosswise, see Fig. 18.

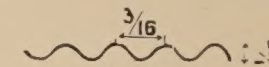


Fig. 18



Shows 3-16 Corrugations; 30 inches wide, 1 to 9 feet long.

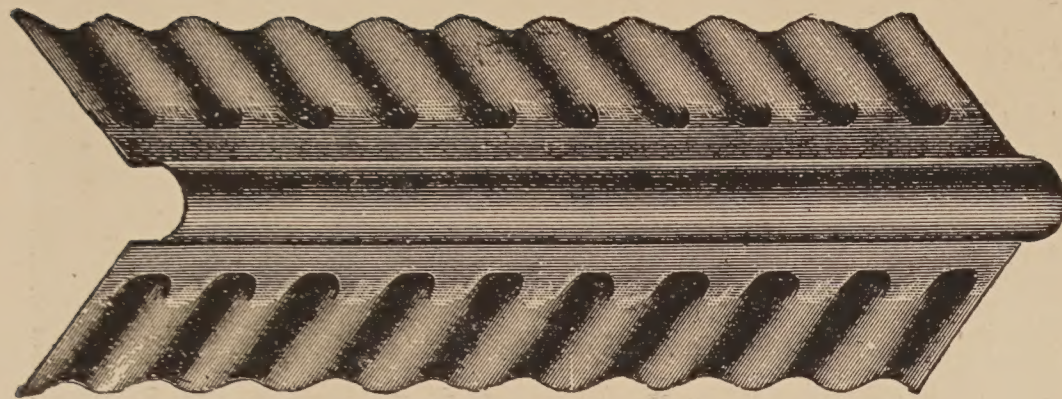
We make the crimp quite shallow in this size of crimp for cornice work; it makes the sheet flat and shows no wave in the cornice after it is formed.



COMBING CAP AND FLASHING, WITH CORRUGATED OR FLAT MARGINS

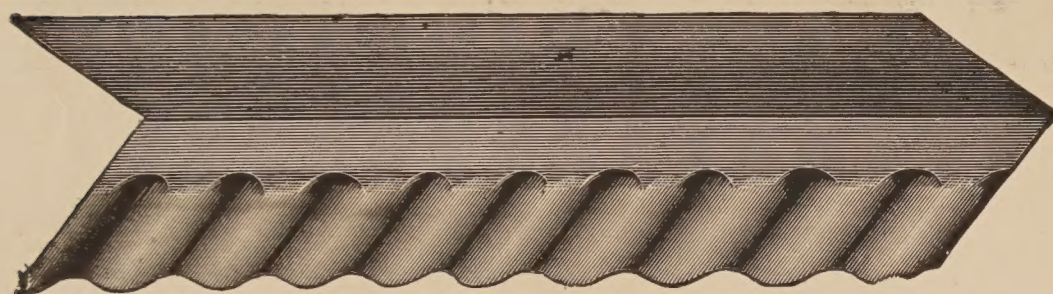
Galvanized or Painted Stock, 28 to 18 Gauge, 30 to 120 inch Lengths

Fig. 19



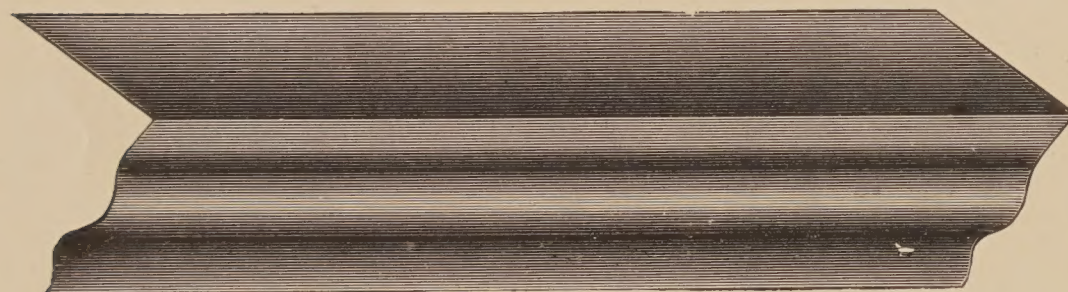
Shows 2 1/2-inch Corrugated Steel Combing Cap.

Fig. 20



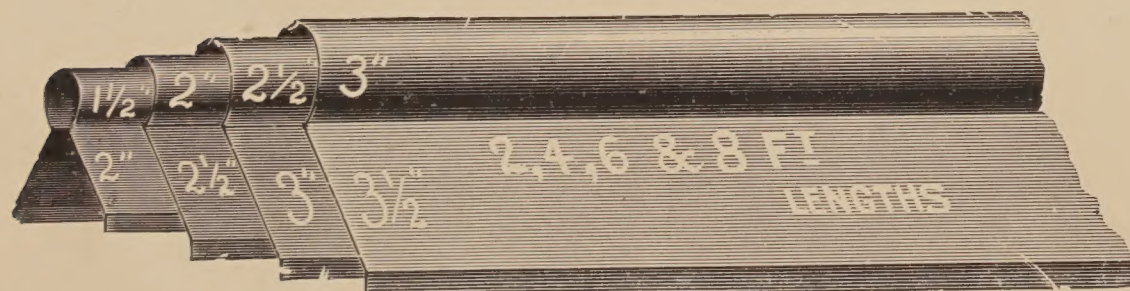
2 1/2-inch Corrugated Steel crosswise flashing.

Fig. 21



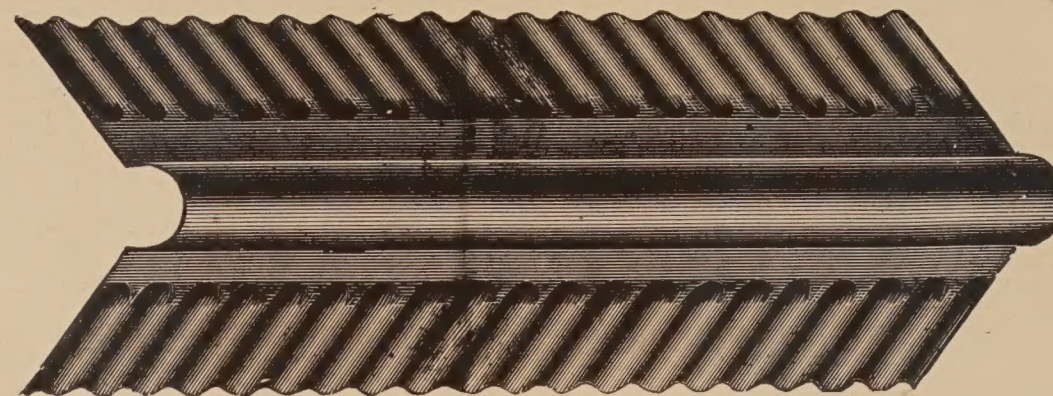
2 1/2-inch Corrugated Steel lengthwise flashing.

Fig. 22



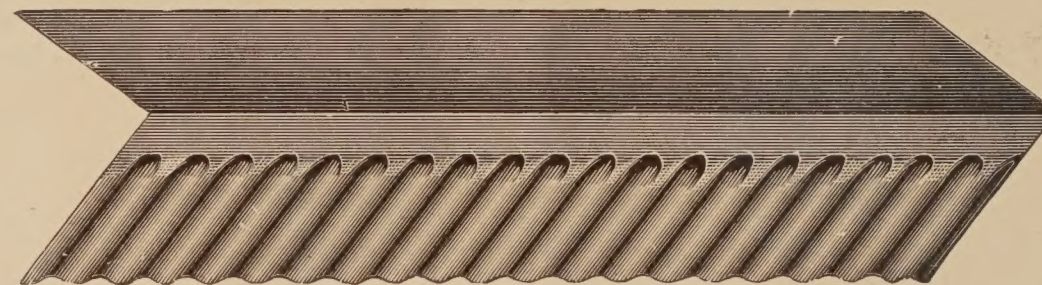
Shows Sections of Commercial Combing Cap.
1 1/2-inch roll, 2-inch apron, up to 3-inch roll and 3 1/2 to 12 inch apron.
Girth of stock, 8 to 30 inches.

Fig. 23



Shows 1 1/4-inch Corrugated Steel Combing Cap.

Fig. 24



1 1/4-inch Corrugated Steel Crosswise flashing.

Fig. 25



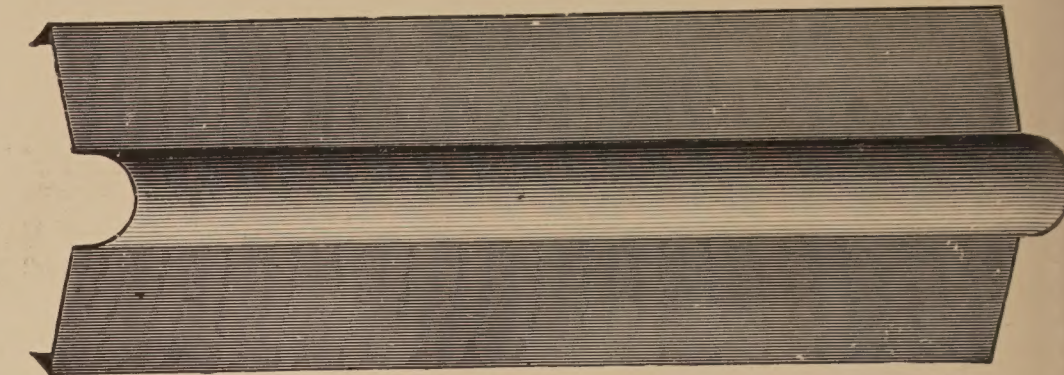
1 1/4-inch Corrugated Steel lengthwise flashing.

Fig. 26



V Crimped Capping. Prices on application.
Ends charged as one foot.

Fig. 27



Shows Metal Combing Cap, largest size, made from 24-inch stock; first flange, 1 inch; second flange, 8 inches, oval centre. Diameter, 3 inches.

Fig. 28



Metal Combing Cap, medium, made from 12 and 14 inch stock. First flange, 1 inch; second flange, 3 and 4 inches, oval centre. Diameter, 1 1/2 to 2 inches.

Fig. 29



Metal Combing Cap, small, made from 8 to 10 inch stock. First flange, 1/2 inch; second flange, 2 to 3 inches, oval centre. Diameter, 1 to 1 1/2 inches.

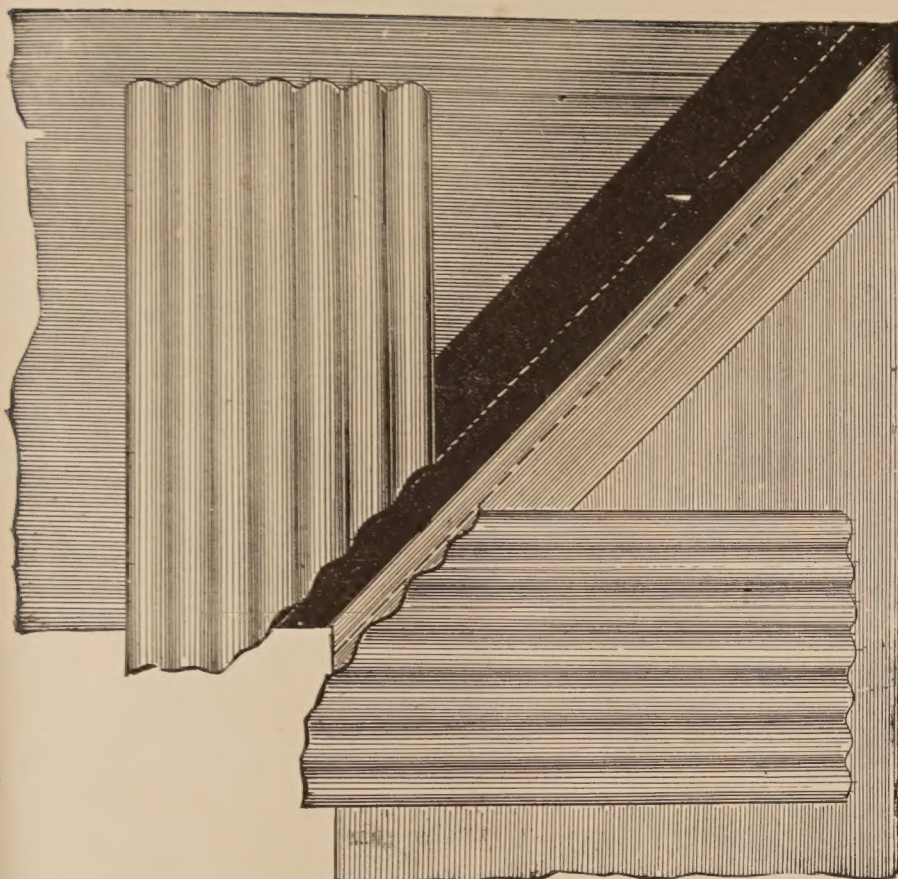
Fig. 30



Metal Combing Cap, special, made from 6 to 8 inch stock. First flange, 1/2 inch; second flange, 1 1/2 to 2 1/2 inches, oval centre. Diameter, 1 inch.

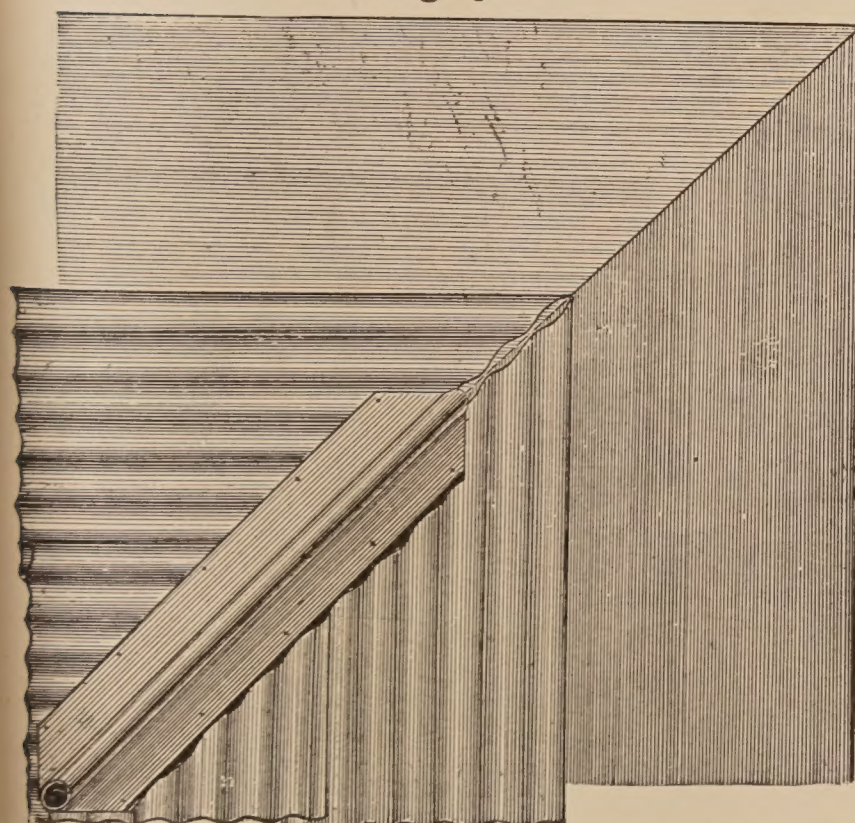
OPENINGS IN ROOFING, HOW PREPARED AND FITTED CORRUGATED VALLEY AND HIP COVERINGS

Fig. 31



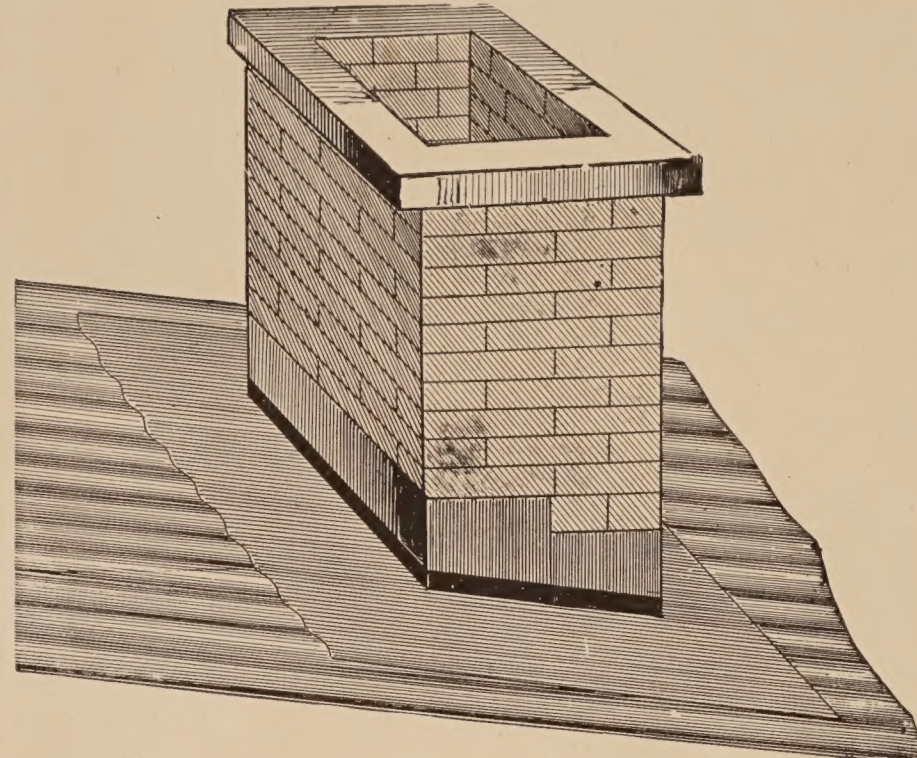
Shows how to cut and apply Corrugated Sheets to valleys.

Fig. 32



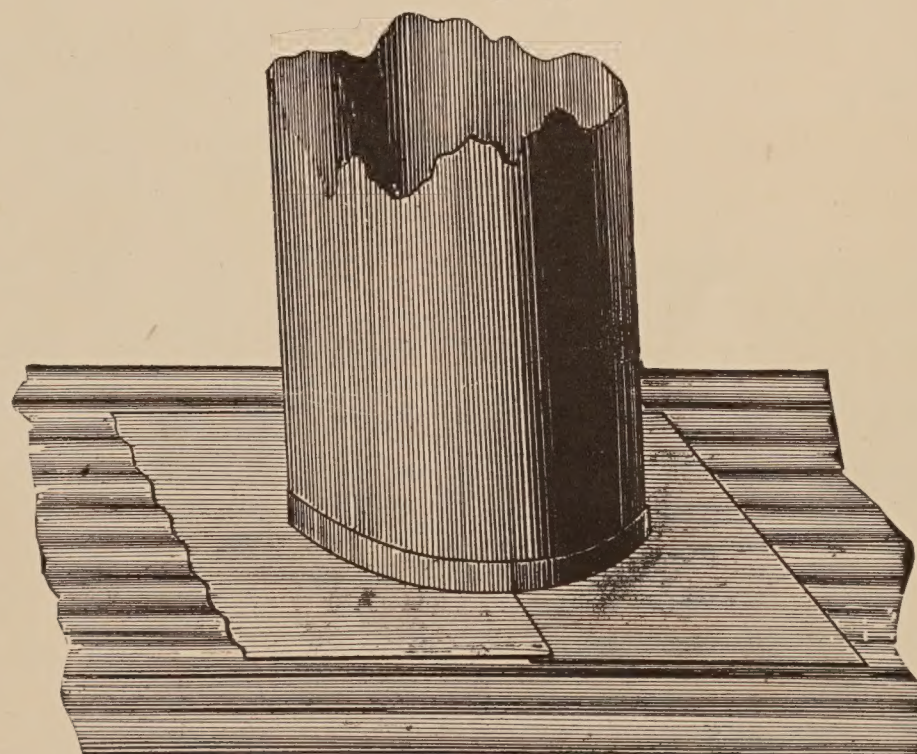
Shows how to apply Corrugated Sheets on hips, and covering same with capping.

Fig. 33



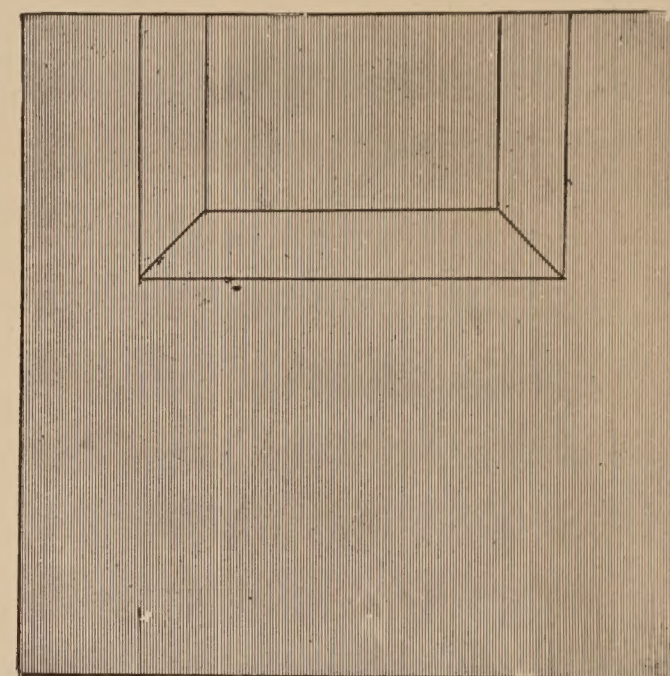
Shows flat sheets fitted and flashed to square chimney opening and Corrugated Sheets. Laid as above, the upper side of flat sheet slips under corrugations; the lower side of flat sheets runs over the corrugated sheets, six or eight inches.

Fig. 34



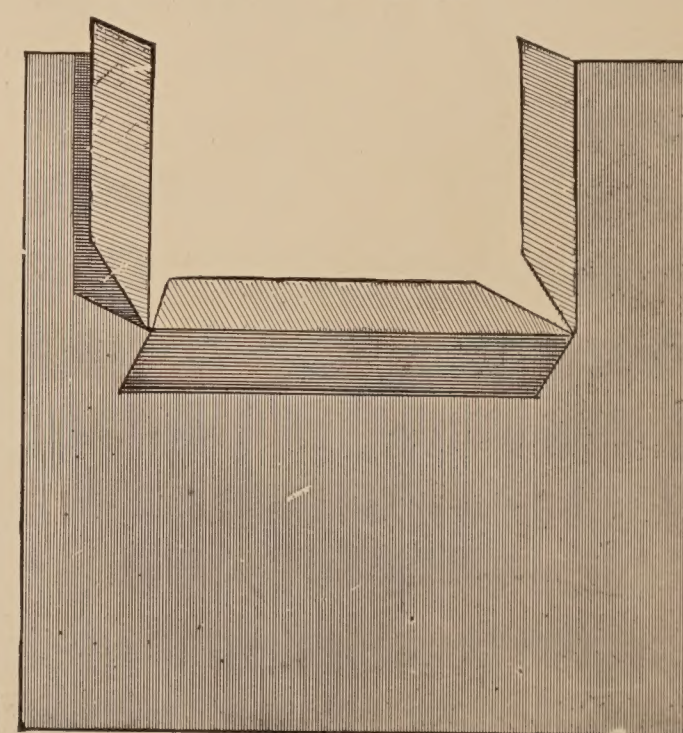
Shows the two plates applied to circular stack. At upper end of flange, next to stack. In applying the plates, one piece runs under the corrugated iron, and the other over, same as Fig. 33.

Fig. 35



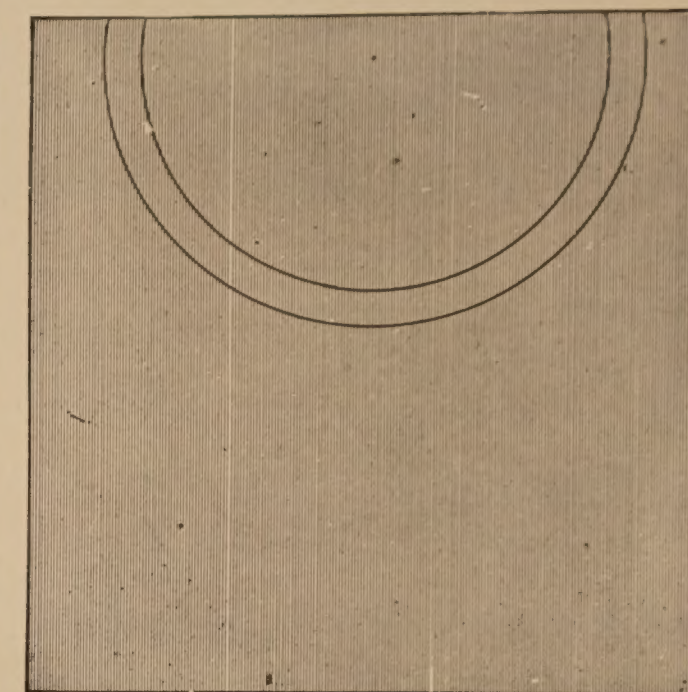
Shows how to prepare flat sheets for fitting around openings. If Corrugated Sheets are used, the flat sheets are fitted to openings and counter-flashed, then corrugated sheets fitted over and under the same.

Fig. 37



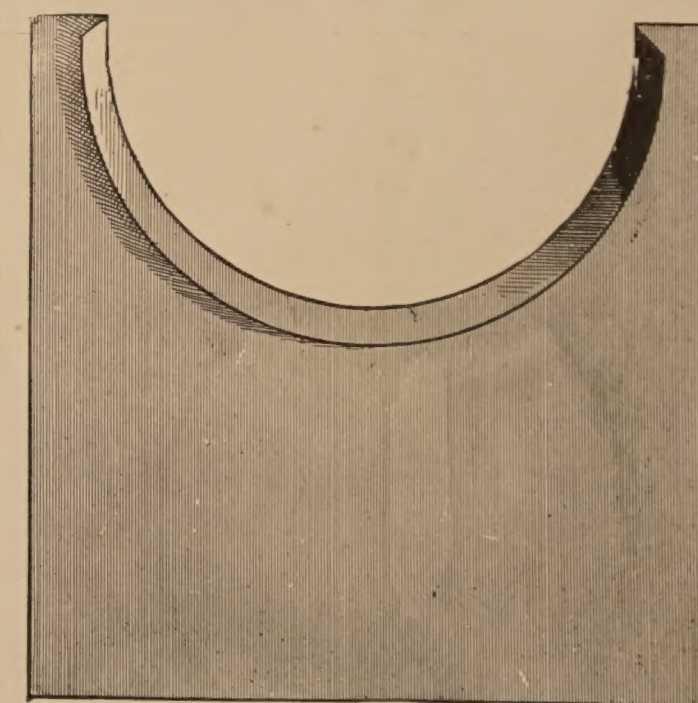
Shows Sheet cut, trimmed and turned for fitting around square openings.

Fig. 36



Shows how to prepare plain sheets to fit around iron stack that is circular in form; and Corrugated Sheets to be used for roofing.

Fig. 38



Shows one plate finished for circular chimney fitting.

Valley flat Sheets, Painted or Galvanized, we keep in stock. Made in widths of 10 to 32 inches, and shipped in rolls of 50 lineal feet. See price list on Valleys and Combing or Hip Capping

CORNER BOARDS, MOULDINGS, STRIPS, ETC., TO BE USED WITH CORRUGATED SHEETS, CLAPBOARDS OR STEEL BRICK SIDING

Fig. 39
STEEL CORNER BOARDS



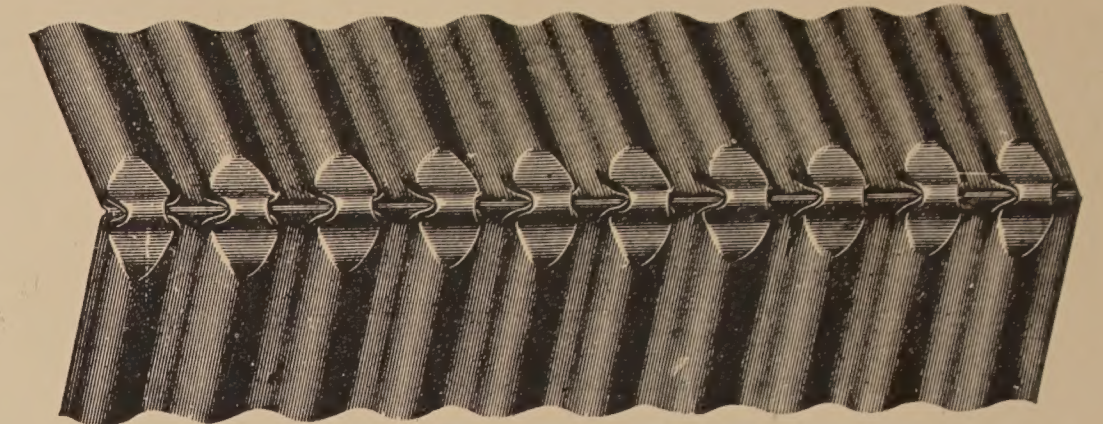
Steel cornerboards are used for finishing corners.

Fig. 43



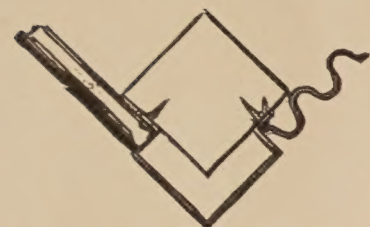
Shows 5/8 Oval Centre, crosswise, for belt line in siding when desired trim top and bottom mould and table.

Fig. 46



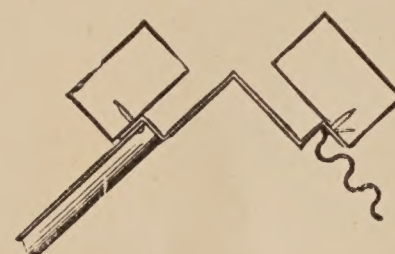
Shows the corrugated comb piece that fits the corrugations as close as the original sheets. Can be made any width up to four feet.

Fig. 40



Shows application of corner board to corner of building.

Fig. 41



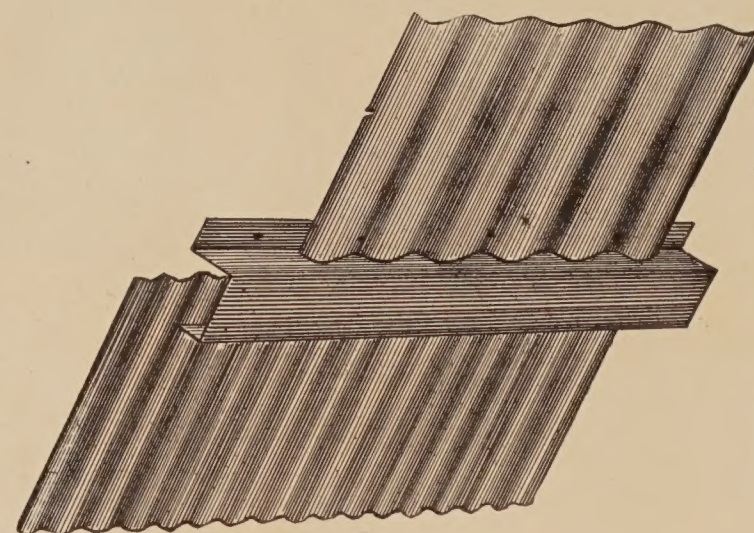
Shows application of corner board to inverted corner.

Fig. 42



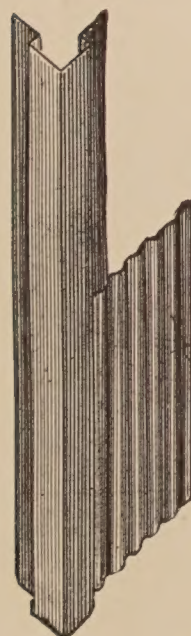
Shows inverted Corners.

Fig. 44



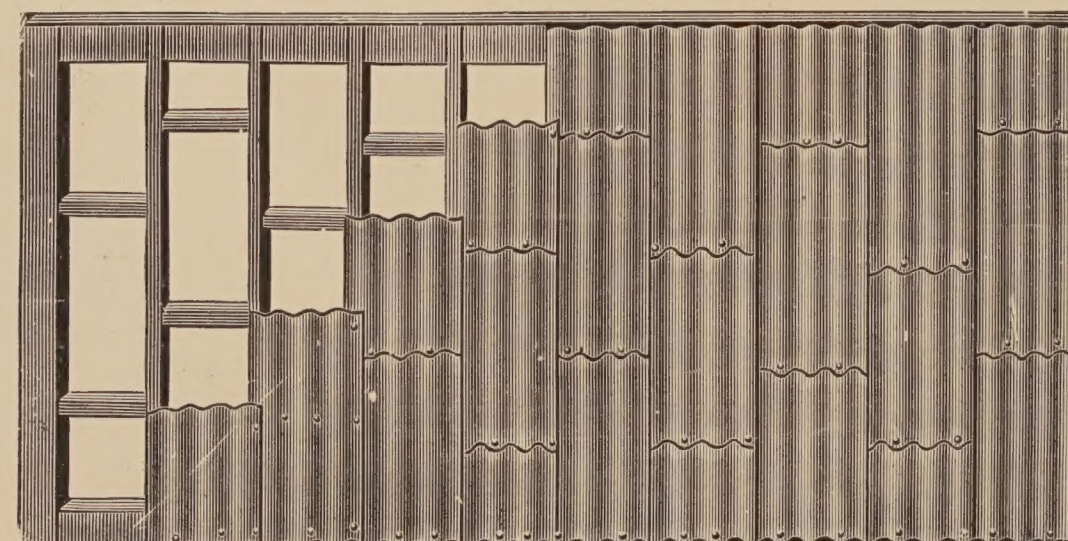
Shows Metal Strip Moulding finish, for Corrugated Sheets. When used as siding, makes a neat finish.

Fig. 48



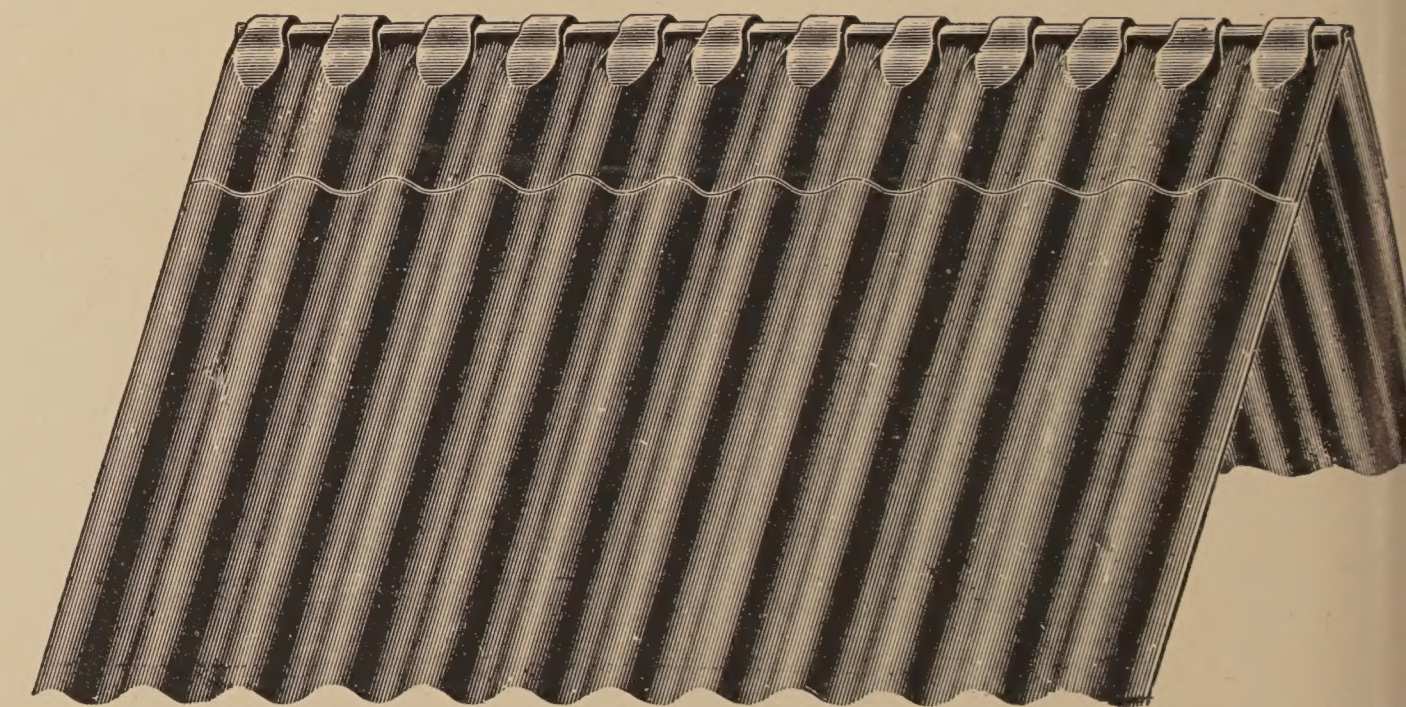
Shows application of corner board used with Corrugated sheets.

Fig. 45



Showing application with necessary lap at sides and ends of straight corrugated sheets, to an Elevator, Mill or Railroad Depot for siding. Sheets 32 x 26 inches, 2 1/4 or 1 1/4-inch corrugations.

Fig. 47



The above cut shows the corrugated comb piece in place on the roof.

The old style corrugated comb cap can only be made in lengths 30 inches long by 15 to 20 inches wide. With the above style we can furnish in 4 feet lengths, to cover on either side of the roof (from the peak), 7 inches or 14 inches over all, in pieces 26 inches wide, or the same width as our corrugated sheets. We could furnish same to cover on the roof 5 feet on either side. It makes a perfect lap, with no possibility of the snow or rain beating in.

An illustration of a book with its cover and endpapers shown in a partially open, exploded view, revealing the internal structure and binding. The book is shown from a three-quarter perspective, with the front cover, spine, and back cover visible. The endpapers are shown as separate, layered sheets, indicating the internal structure of the book. The binding is visible, showing the stitching and the way the pages are held together. The illustration is a detailed line drawing, likely a technical or historical drawing of a book's construction.

This is used largely on grain elevators, foundries and all kinds of manufacturing buildings. Regular lengths, 120 inches. We can make sizes to suit the distance between rafters, and for any size or design of cornice.

Fig. 50

28 GAUGE STEEL.		Painted.	Galvanized.
3-inch face, per lineal foot		10 cents.	12 cents.
4 " "		11 "	13 "
5 " "		12 "	14 "

The image shows the front cover and spine of a book. The cover is a dark, charcoal grey color with a fine, vertical ribbed texture. The spine is a lighter, brownish-grey color, also with a ribbed texture. The book is shown from a slightly angled perspective, highlighting the thickness of the cover and the spine.

9-inch Girth, per lineal foot	28 GAUGE STEEL.	Painted.	Galvanized.
		8 cents.	12 cents.

This image shows a blank, aged, cream-colored page, likely an endpaper or flyleaf of a book. The paper has a slightly textured appearance with some minor creases and discoloration, characteristic of old paper. The left edge of the page is bound into the book's spine, showing the inner structure of the binding. The overall tone is a warm, off-white or light beige.

FOR 28 GAUGE STEEL.

Fig. 53

28 GAUGE STEEL.

	Painted.	Galvanized.
9-inch Girth, per lineal foot	8 cents.	12 cents.



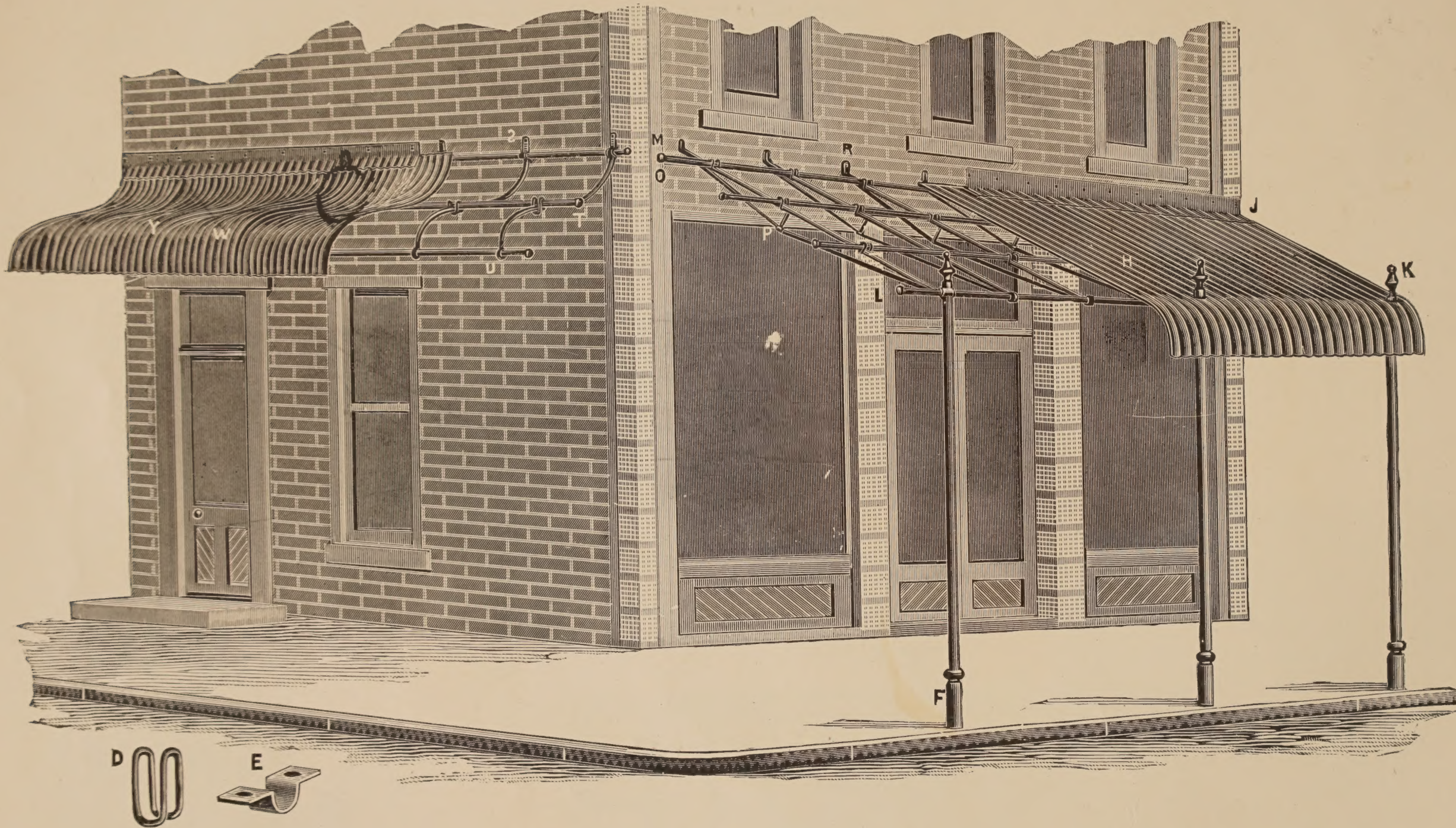
For prices on heavier gauges, add 1-3 cent per inch per lineal foot for each gauge heavier than 28 gauge. Special length and size of girth made to order from specifications.



ANGLE FORMS OF CORRUGATED SHEETS

Permanent Iron Frame for Awnings and Veranda Covering. Covered with Straight or Curved Sheets, as in Figs. 55 and 59

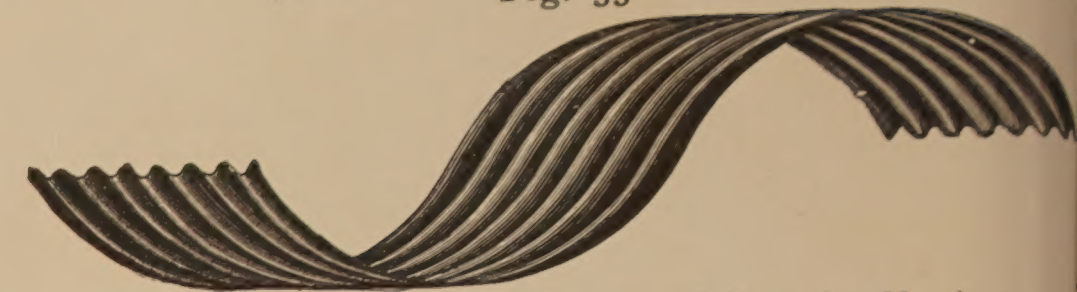
Fig. 54



Shows a frame structure covered with our Steel Brick and Stone Panel corner finish. Brick covering, see page 26

P—Iron gas pipe frame truss. O—Purloins. P—Truss rafters. D—Iron loop for binding purloins and rafters. E—Clips for fastening corrugated sheets to purloins. F—Iron post. H—Corrugated sheet curved. J—Corrugated flashing. K—Iron post finial. L—Stone panel (steel) finish. M—Corner finish of stone panel. For prices on corrugated covering, straight or curved, see price list. For iron frames, they vary according to size, per lineal foot, from \$1.75 to \$4.50; depends upon the width and length of the frame. For estimate of cost, send us the height of front of building, the width from edge of building to curb, and length in width it is to cover, and we can give the cost of same all complete, ready to put up. S—Gas pipe bracket frame. U—Lower guard rod. Y—Double curved sheets. W—Side lap.

Fig. 55



Shows Double Curved Corrugated Iron for Ventilators and Verandas, as in letter W., as in

Fig. 54

Fig. 56

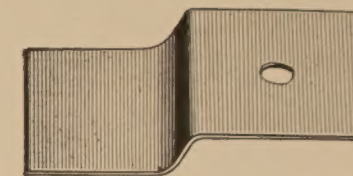


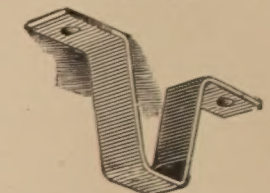
Fig. 57



Shows Iron Band for use in fastening Corrugated sheets to Iron Purloins. 6 to 30 inches long, 1 1/4 inches wide

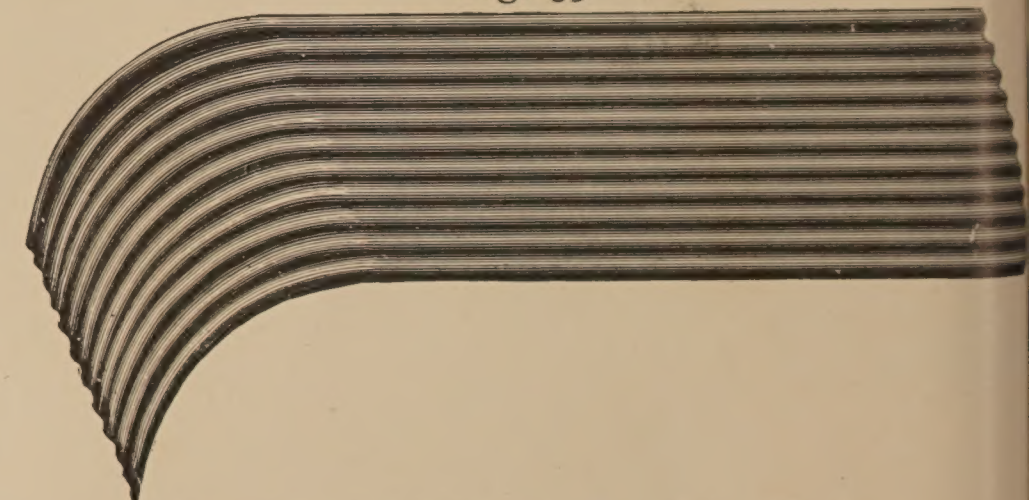
1 1/2 inches wide, 2 1/2 inches long. Clip used in fastening Corrugated Sheets to Iron Frames.

Fig. 58



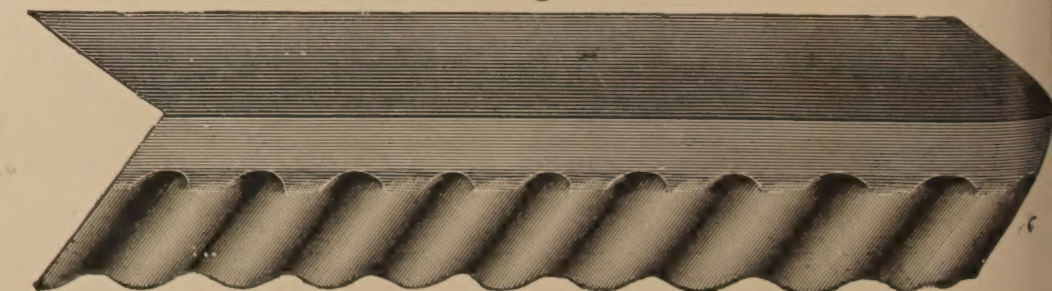
Shows Iron Stirrup used in fastening Corrugated Sheets on Iron frames. We make them this shape of any desired size.

Fig. 59



Shows Corrugated Sheets, curved for Permanent Awnings; neat, cheap and durable; as in Fig. 54, letter H.

Fig. 20

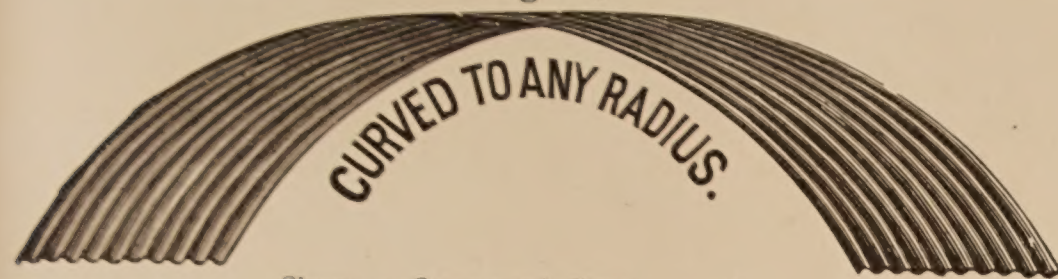


2 1/2-inch Corrugated Steel Crosswise flashing, as in Fig. 54, letter J.

ANGLE FORMS OF CORRUGATED SHEETS. CORRUGATED CURVED ARCHES. STRENGTH OF CORRUGATED STEEL ARCHES

These can be curved to any desired radius, within bending capacity of the material.

Fig. 60

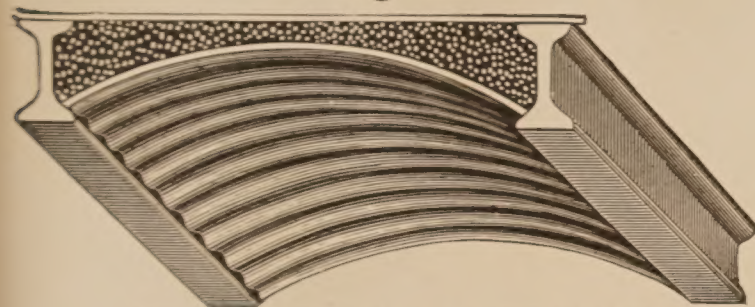


Shows a Corrugated Sheet curved.

We make these to specifications required, of steel or iron, and give especial attention to exactness in this kind of work, having a large patronage from the leading architectural iron works, bridge works, builders, etc. These sheets are in very general use, besides for purposes indicated, as they present a handsomely finished appearance, and often save expense in construction, *e. g.*, for lantern or ventilator roofs, or dormer window caps, etc.

These arches, for strength, lightness, durability and fire-proof qualities, cannot be excelled. Corrugated arches have often been tested (Trautwein), and have never shown any deflection at a pressure of 1,000 pounds per square foot, and little deflection at 2,000 or 3,000 pounds per square foot, of 18 wire gauge.

Fig. 61



Shows a section of a Corrugated Steel Arch, for fire-proof buildings, etc., in which our Corrugated Curved Sheets are used.

The weight of the arches, with concrete filling on top of beam, is but little over half that of a brick arch, and concrete filling same height, thus allowing fewer or lighter beams to be used, and lessening the load on the walls. These floors are from 20 to 35 per cent. cheaper than those built of brick arches, or, in fact, any other fireproof floor.

Curved ceilings, when painted suitably, present a very beautiful finish, and for durability far excel plaster.

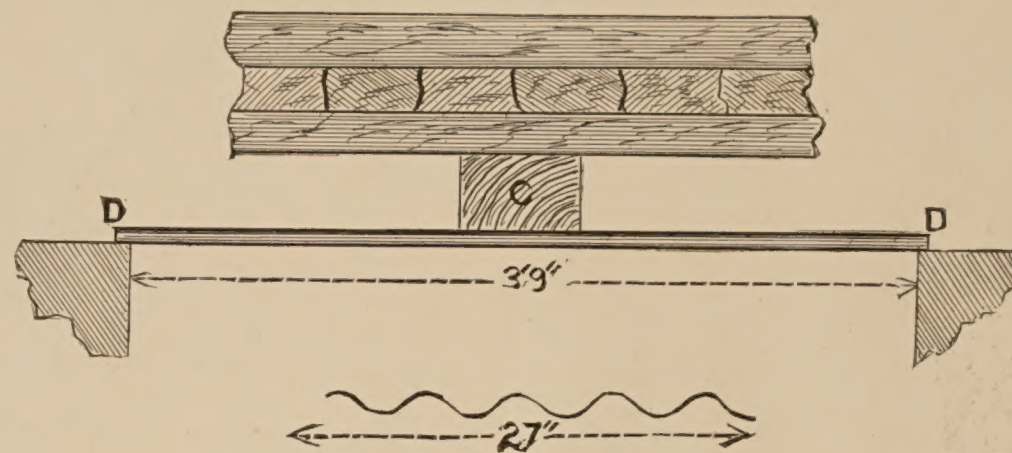
The use of curved sheets for roofing, ceiling and other purposes, are infinite, and many will suggest themselves to the reader besides those here named.

First.—A sheet of No. 16 iron (about 1-15 inch thick) 27 inches wide by 4 feet long, with five complete corrugations of 5 inches by 1 inch, was laid on supports 3 feet 9 inches apart. A block of wood 9 inches wide by 7 inches thick and 30 inches long was placed across the centre, and gradually loaded with castings weighing 1,600 pounds.

This caused a deflection at the centre of precisely $\frac{1}{2}$ an

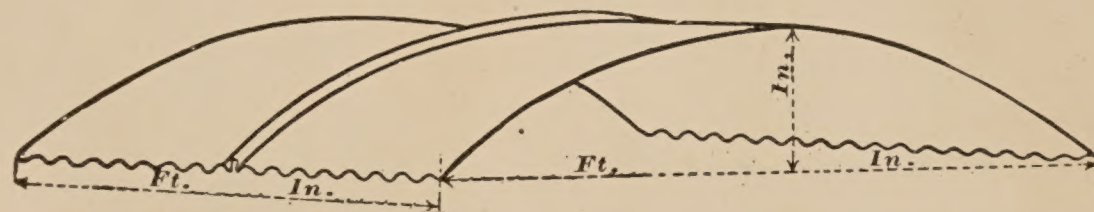
inch. On the removal of the load after half an hour, no permanent set was appreciable. The severity of the test was purposely increased by applying the several castings very roughly, jolting the whole as much as possible. The suspended area of the sheet was 8.44 square feet, and since the actual centre load of 1,600 pounds is equivalent to 3,000 pounds equally distributed, it amounts to 3,000—8.44 equals, 355 pounds per square foot distributed. But 3,000 pounds distributed would produce a deflection of but about full $\frac{1}{4}$ of an inch. Again, 355

Fig. 62



pounds per square foot is about four times the weight of the greatest crowd that could well congregate upon a floor. Consequently this iron, at 3 feet 9 inches span, is safe in practice for

Fig. 63

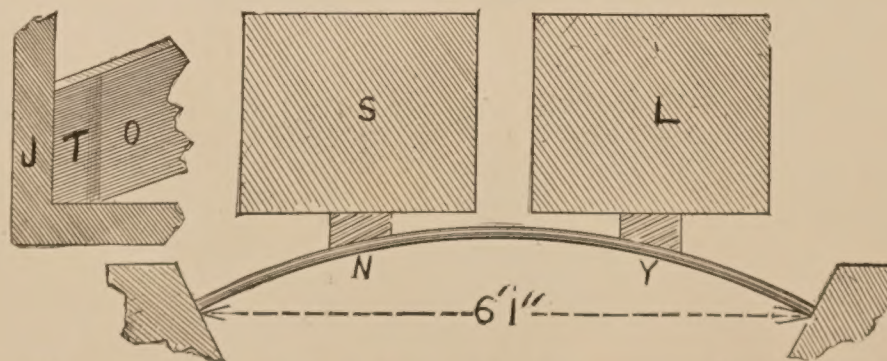


Allow for projections, if for Roofing. If for Ceilings, make base line from $\frac{1}{4}$ to $\frac{3}{8}$ less that distance between webs of I Beams, etc.; when shoes are used, state thickness of iron used in same, and give sketch of section of shoe, and, if so, width of same.

an ordinary crowd; moreover, such a crowd would produce a centre of deflection of only the $\frac{1}{4}$ part of $\frac{1}{4}$ of an inch, or 1-16 of an inch, or 1-720 of the clear span, which is but two-thirds of Tredgold's limit of 1-480 of the span. (See Art. 26, of Strength of Materials, p. 196.)

In one experiment the ends of the sheets rested upon supports dressed so as to present undulations corresponding

Fig. 64

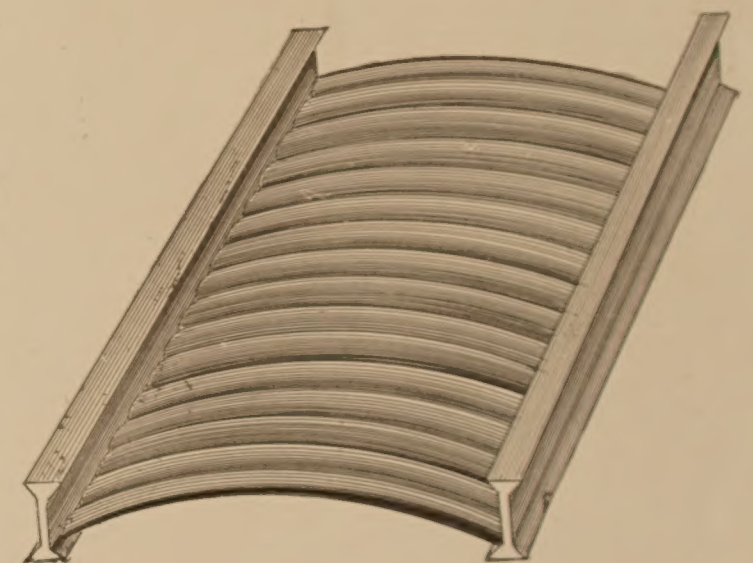


tolerably closely with the shape of the corrugations, but in the other the supports were flat, and each end of the sheet rested only upon the lower points of the corrugations. No appreciable difference was observed in the results.

Second.—An arch of No. 18 (1-20 inch) iron, corrugated like the foregoing, but the depth of corrugation increased to $1\frac{1}{4}$ inches, by the process of arching the sheet; clear span, 6 feet 1 inch; rise, 10 inches; breadth, 27 inches of which, however, only 25 inches bore against the abutments).

Each foot of the arch abutted upon a casting, the inner portion of which was undulated on top to correspond with the corrugations of the arch which rested upon it. At *y* (one-fourth of the span) two wooden blocks were placed, occupying a width of 9 inches and extending across the arch; on them was piled a load of castings, to the extent of 4,480 pounds, or two tons. Under this load the arch descended about $\frac{1}{2}$ inch at *y*, becoming flatter along that side, and slightly more curved upward along the unloaded side *n*. Two similar blocks were then placed at *n*, and two tons of load *s* were piled upon them in addition to the two tons at *l*, making a total of 8,960 pounds, or four tons. This brought the arch more nearly back to its original shape, but still slightly straightened at both *n* and *y*, and a little more curved in the centre. The load was then increased to 10,000 pounds, and left standing for several days. Two iron ties, each $\frac{1}{2}$ by $1\frac{3}{4}$, which were used for preventing the abutment casting from spreading, were found to have

Fig. 65



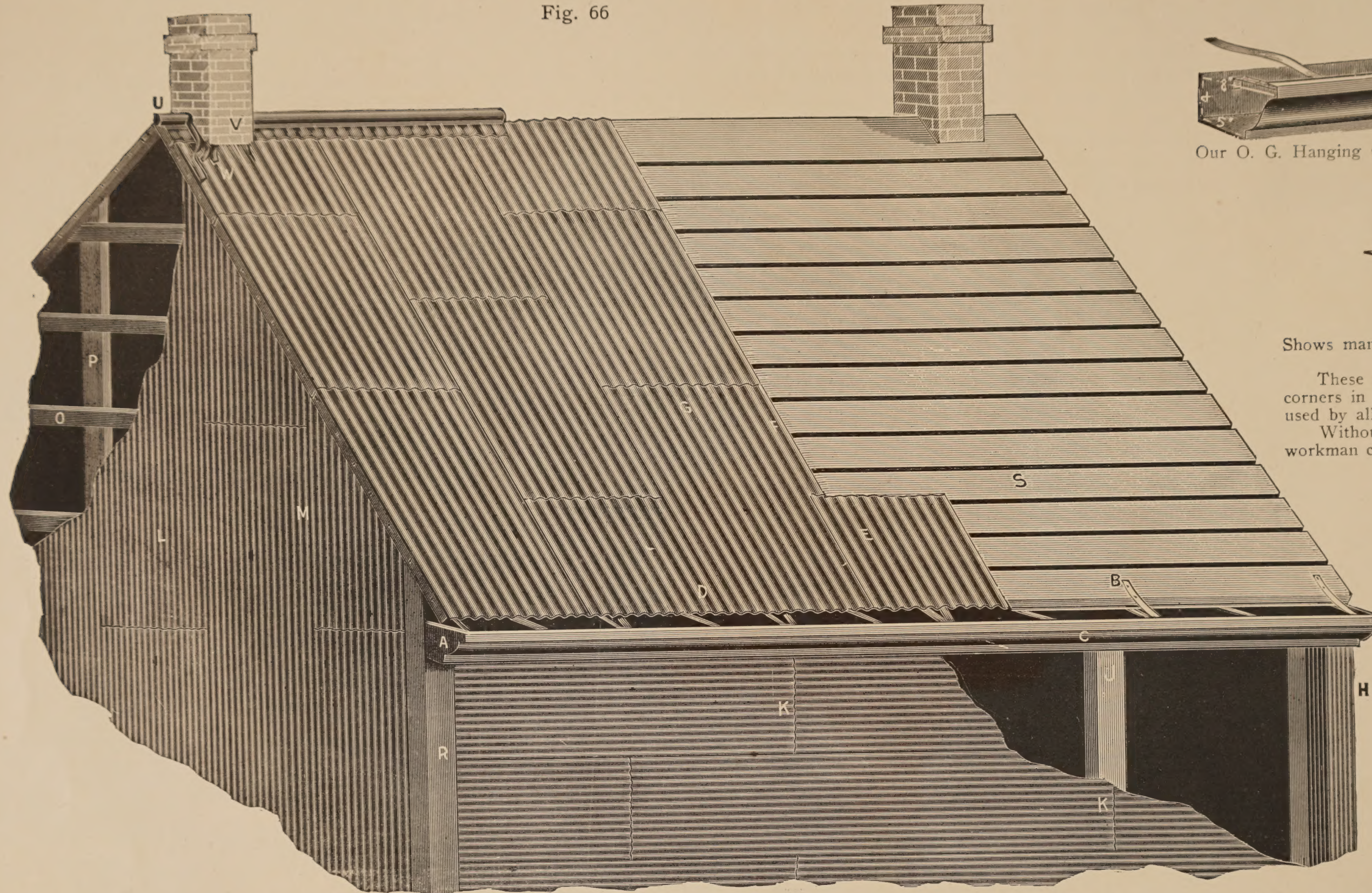
Shows curved Corrugated Sheet, resting on flanges of I beams—the space above to be filled with concrete if desired, as in Fig. 61.

stretched nearly $\frac{1}{4}$ of an inch; additional ones were inserted, and the load increased to a total of six tons, or 13,640 pounds, parts of it on *s* and *l* and part in the shape of long broad bars of iron at the centre of the arch below the loads *s* and *l* and between *n* and *y*. So far as could be judged by the eye, the shape of the arch was almost perfect. The loads *s* and *l* did not touch each other. After standing more than a week, the load was accidentally overturned, crippling the arch. The load was equal to about 1,000 pounds per square foot of the arch.

Such arches have since come into common use instead of brick for fireproof floors. *Trautwein's Engineers' Pocket Book*, page 371, 20th edition.

CORRUGATED SHEETS

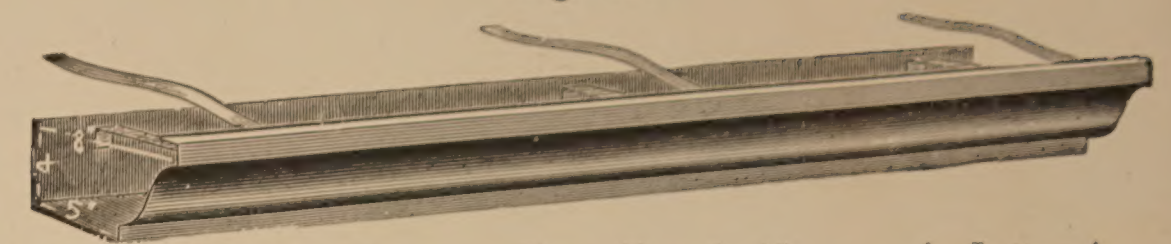
Fig. 66



Shows a Building Covered with Corrugated Iron Sides and Roof.

A—O. G. Hanging gutter, No. 3. B—Gutter straps. C—Braces and cornice finish. D—Sheets project at bottom 3 inches over eaves into gutter. E—Corrugated sheet, side lap 1 corrugation. F—Inside or under corrugations of last sheet laid. G—Cross lap 3 inches and nailed on top of corrugation, using lead washer, Fig. 1. H—Four inch square corrugated downfall, Fig. 195. J—Studding. KK—Where to nail sheets to fasten them to studding; sheets put on horizontal. L and M—Nailing point for siding; sheets put on perpendicular as desired. O—Cross slats, put 2 feet apart. P—Studding, 4 feet apart. R—Steel corner board, Fig. 39. S—Sheathing rough boards. U—Combining cap, Fig. 19. V—Brick chimney, and our fibre flashing finish, page 30.

Fig. 186



Our O. G. Hanging Gutter or Eaves Trough, No. 3, as in Letter A of Fig. 66.

Fig. 39

Patented May 31, 1887.



Shows manner of finishing the corner of building with Metal, made convex or concave.

These are so formed that they admit of finishing the angles and corners in a neat and fire-proof manner, and are recommended to be used by all architects and builders.

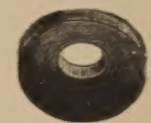
Without them corners are not completely covered, and no good workman can make a perfect finish except by their use.

Fig. 195



Shows 4-inch Corrugated Galvanized Water Conductor, square.

Fig. 1. 35c. per lb., extra



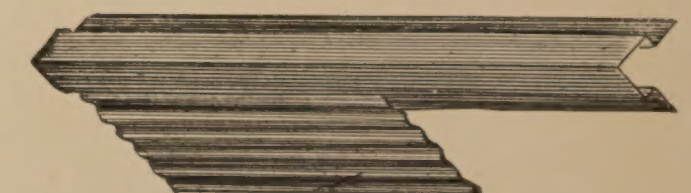
Shows Lead Washer to use under nail head in roofing.

Fig. 2



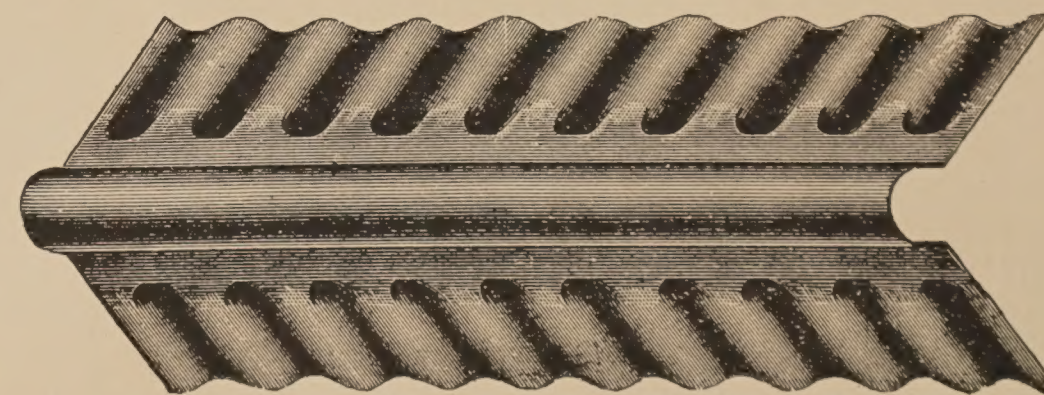
Show size of wire nails to be used.

Fig. 48



Shows application of corner board, used with Corrugated Iron.

Fig. 19



Shows 2 1/2-inch Corrugated Steel Combining Cap, Letter U.

APPLICATION OF PRESSED STANDING SEAM AND CORRUGATED SHEETS TO BUILDINGS USED FOR MANUFACTURING PURPOSES

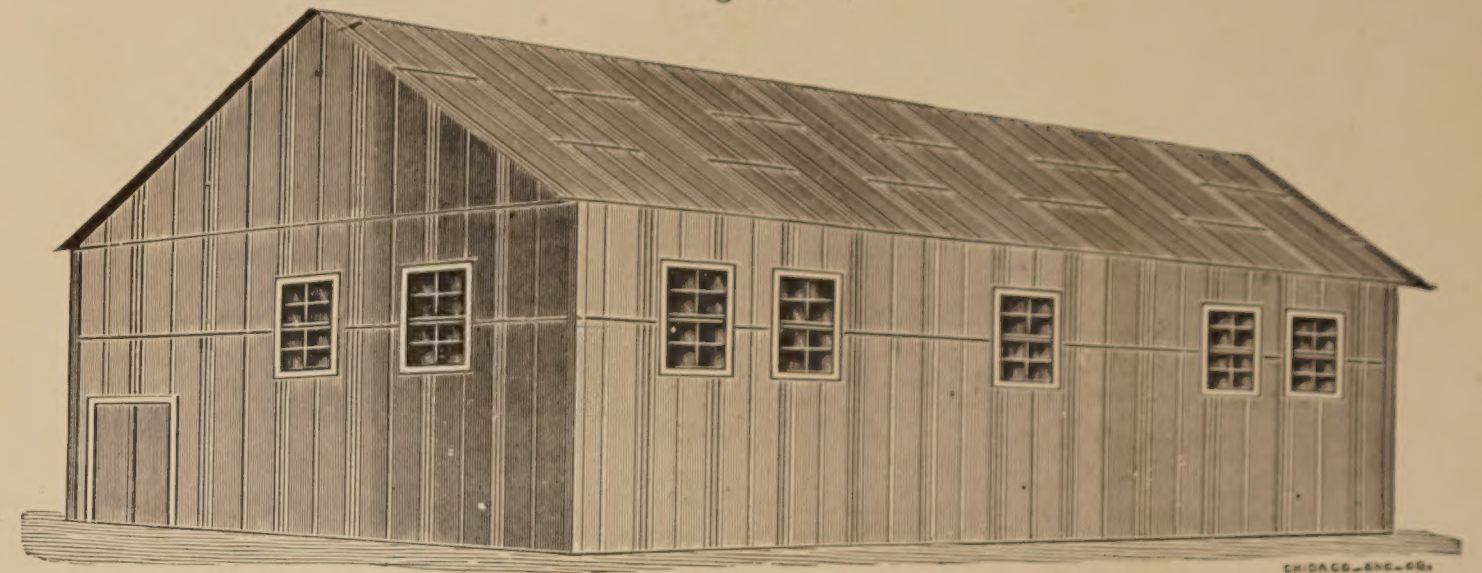
Fig. 67



Shows application of Corrugated Sheets and Metal Clapboards on sides, and Pressed Standing Seam on the main roofs and shedding.

1st—Building is 88 x 80 feet; 50 feet to ridge; the sides are covered with our Metal Clapboards, and the roof with Pressed Standing Seam. 2d—Building is 70 x 80 feet; 45 feet to ridge; covered with Corrugated Iron. 3d—Building is 60 x 70 feet; 40 feet to ridge; covered with Corrugated Sheets. The entire plant is covered with our sheet metal goods. It will be noticed that in applying the Corrugated Sheets to the sides that we laid it crosswise, direct on the studding. This makes a stronger and neater job; and when it was completed, it was insured upon the same basis as if it were constructed of stone or brick; the cost was one-third of either.

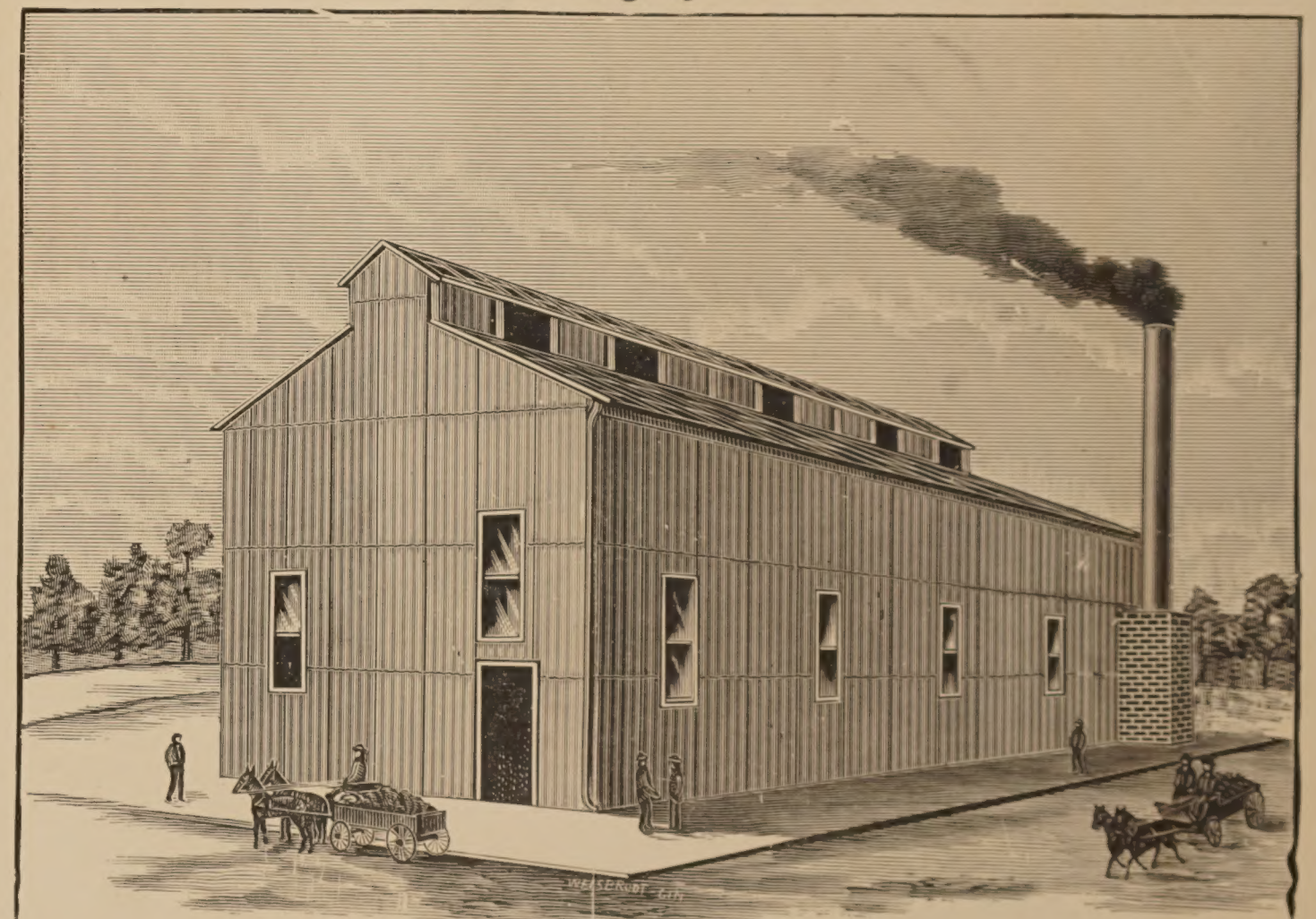
Fig. 68



Shows building roofed and sides covered with Corrugated Sheets, edges and centres.

This is a cheap and durable metal covering for buildings of light construction. The material is made from 28-inch wide sheets, of any length up to 10 feet. A double Corrugation is made in outside edges, and in centre of sheets; this stiffens the plates and provides for end and side laps, with water-proof results. Width after forming, 26 inches.

Fig. 69

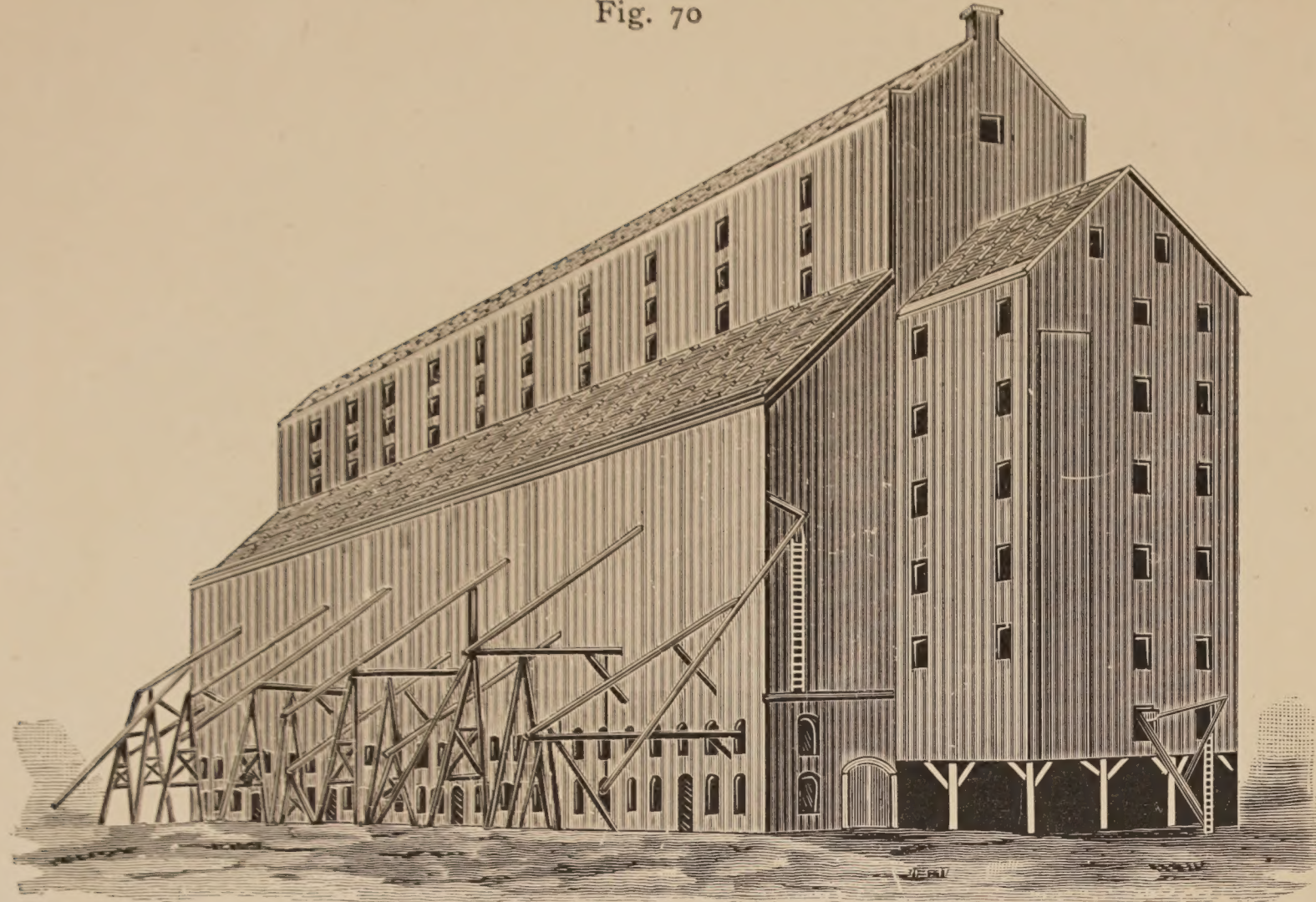


Shows application of Corrugated sides and flat Standing Seam for Roofing (Corrugated Sheets applied crosswise.)

For a cheap, durable, fire-proof covering, Corrugated Sheets is unequaled, and is extensively used all over the country for all kinds of buildings, porticos, awnings, etc. If parties ordering Corrugated Sheets will give exact length of rafter and width of roof, as per our diagram sheet, we can often send sheets of right length to fit roof and sides, and thus save labor, cutting and waste of iron.

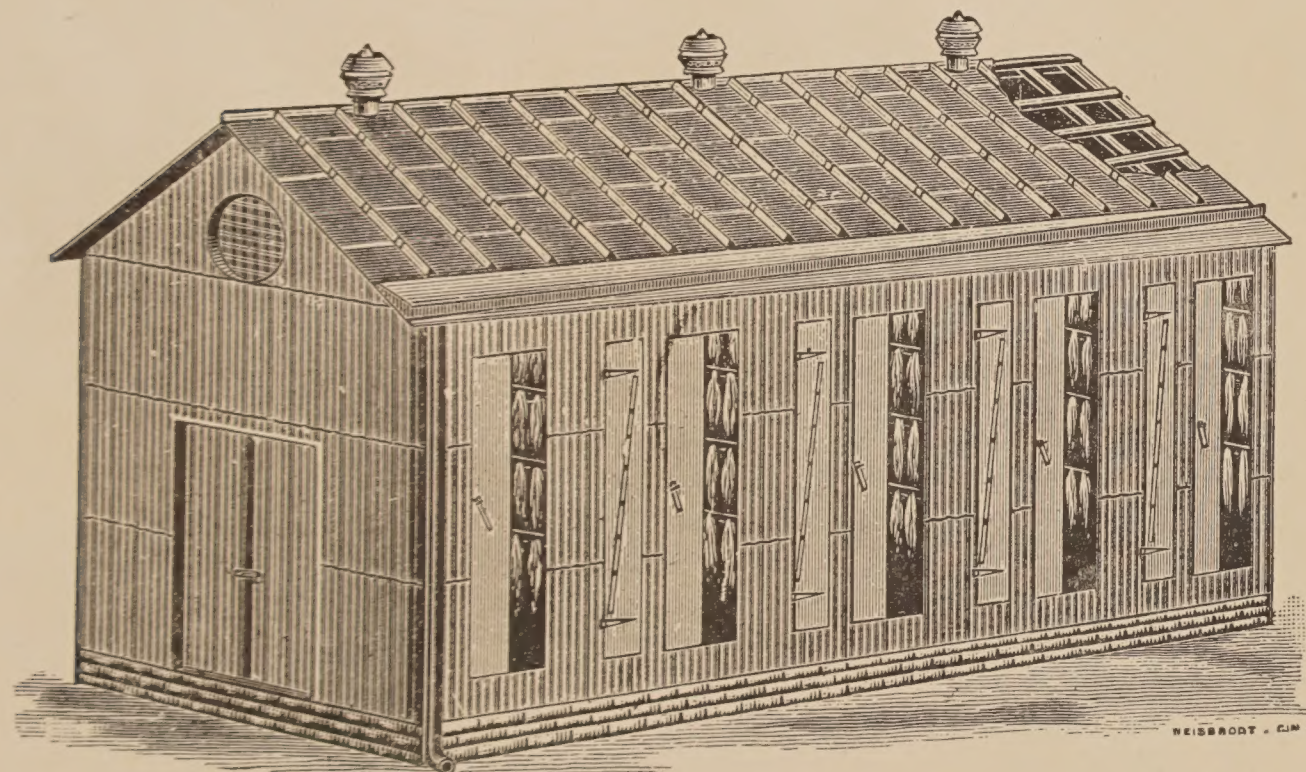
SUGGESTIONS FOR FIRE-PROOF BUILDINGS

Fig. 70



Shows Corrugated Sheets applied as Siding, and Standing Seam for Roofing.

Fig. 71

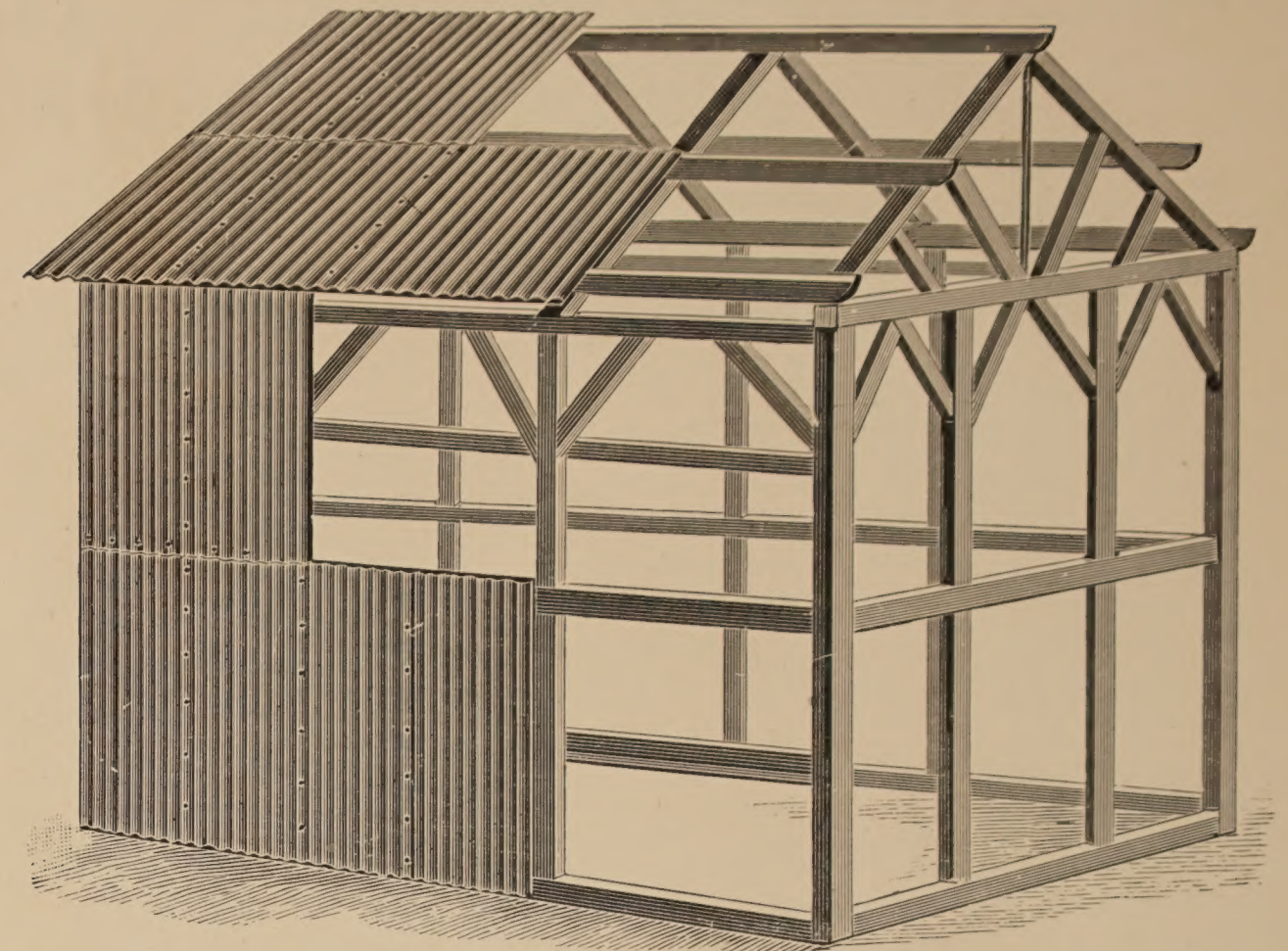


Shows Iron Tobacco Barn or Warehouse covered with V-Crimped Roofing and Corrugated for Siding.

Tobacco cured in Iron Buildings increase in value from 15 to 20 per cent. In other words, the difference in the price of tobacco cured in an Iron Building will pay for the iron in from five to seven years.

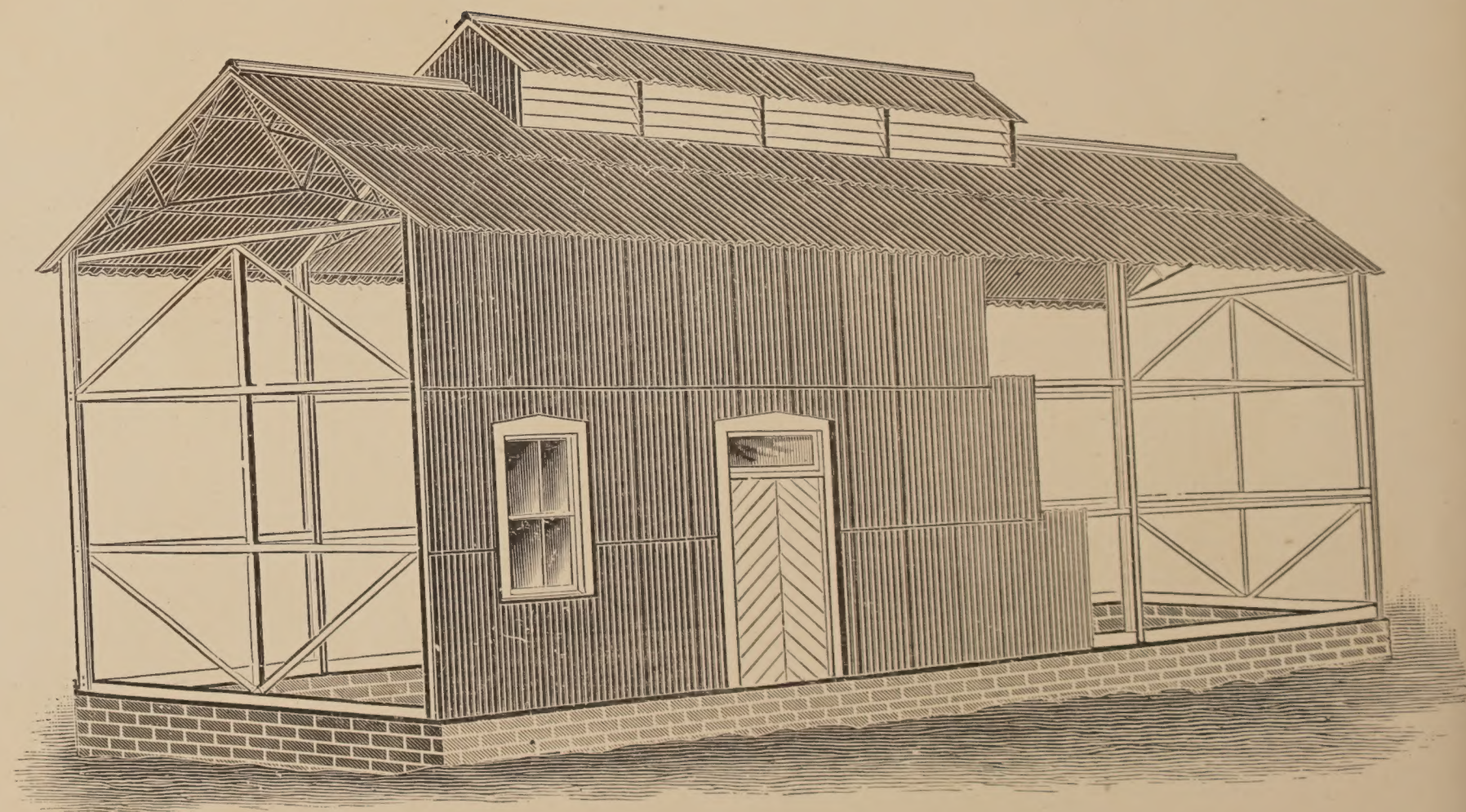
At the low prices which have been prevailing during the past two years for leaf tobacco, it behooves farmer and redriers of tobacco to put their goods in such shape that they will command the highest prices to insure a profit. This end can only be secured by building warehouses in the manner shown. The burning of tobacco barns is of common occurrence, causing the rate of insurance to be placed high. The insurance can be reduced fully one-half by using metal, as the buildings so constructed are fire-proof, and cannot be destroyed by either lightning, spontaneous combustion or incendiarism.

Fig. 72



Shows application with necessary lap at sides and ends of straight Corrugated Sheets to an Elevator, Mill or Railroad Depot for siding.

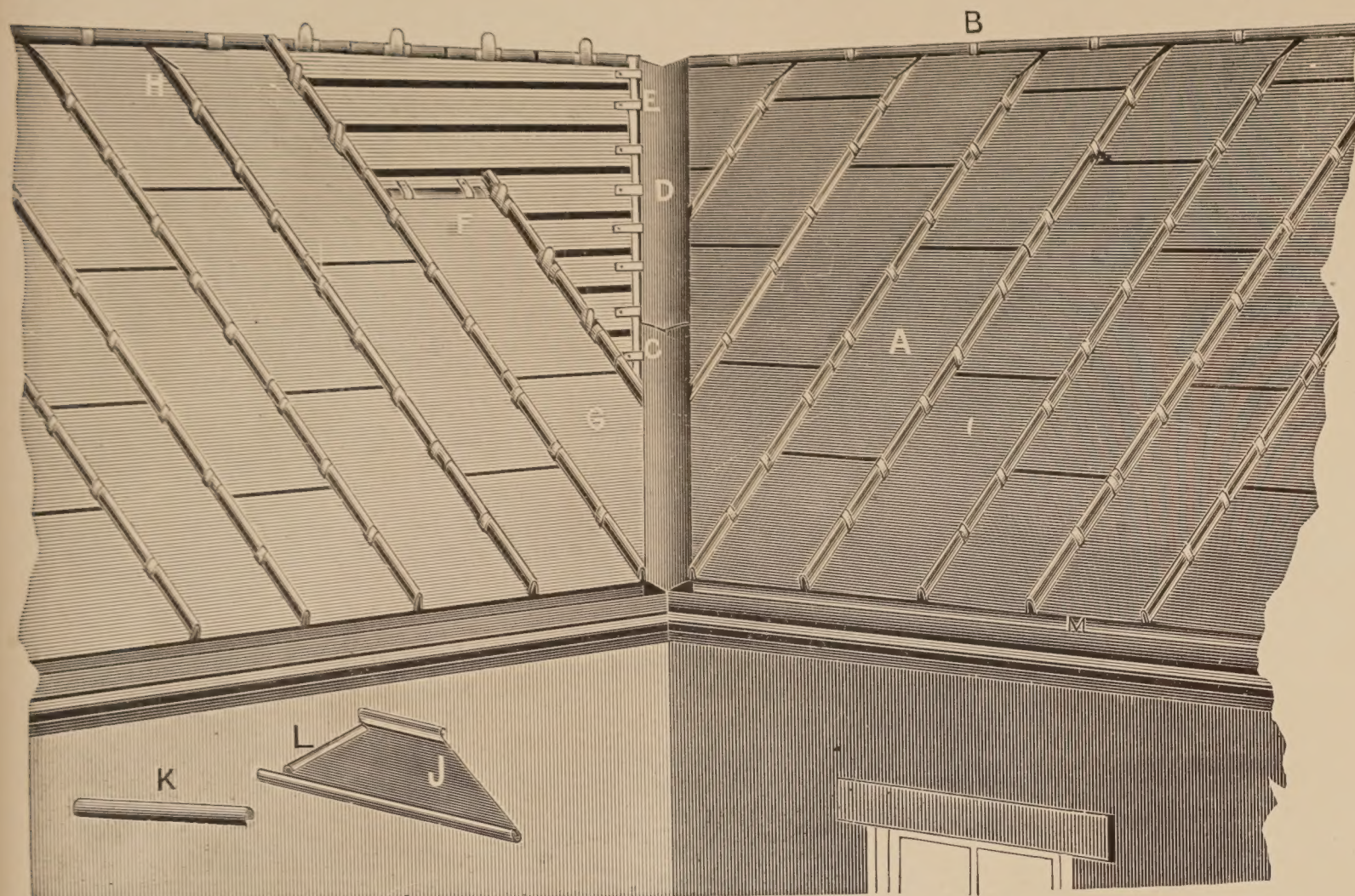
Fig. 73



Shows application of Corrugated Sheets on Skeleton-frame Building, made of Angle Iron or Timber.

ROOF WITH VALLEY AND BOX GUTTER AND PARAPET WALL AND PITCH ONE WAY

Fig. 74

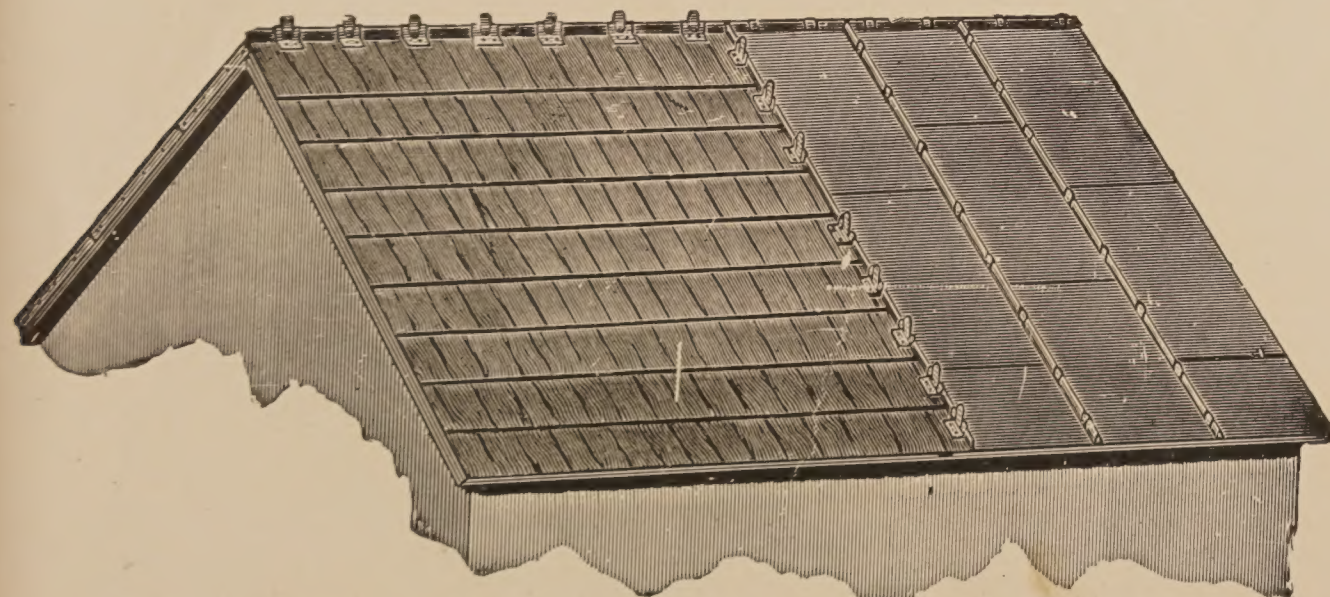


Shows the manner of laying Pressed Standing Seam Roofing on Buildings having a valley.

A—One side finished. B—Comb finished. This is formed from the sheet and fastened with our straight cleats. C—shows cross joint in valley. D—Valley laid complete. E—Side of valley cleated to sheeting and leaving edge turned ready to receive roofing sheets. F—Roofing sheets turned at end and cleated. G—Sheet hooked into valley, locked and hammered down. H—Standing Seam hammered down to allow of turning up on inch to form Standing Seam for ridge cap. J—Sheet all formed to fit in valley showing how mitre is cut. L—End joint formed on upper end of sheet. K—Ridge cap. By following the plan of laying as explained above you will secure a roof that is perfect.

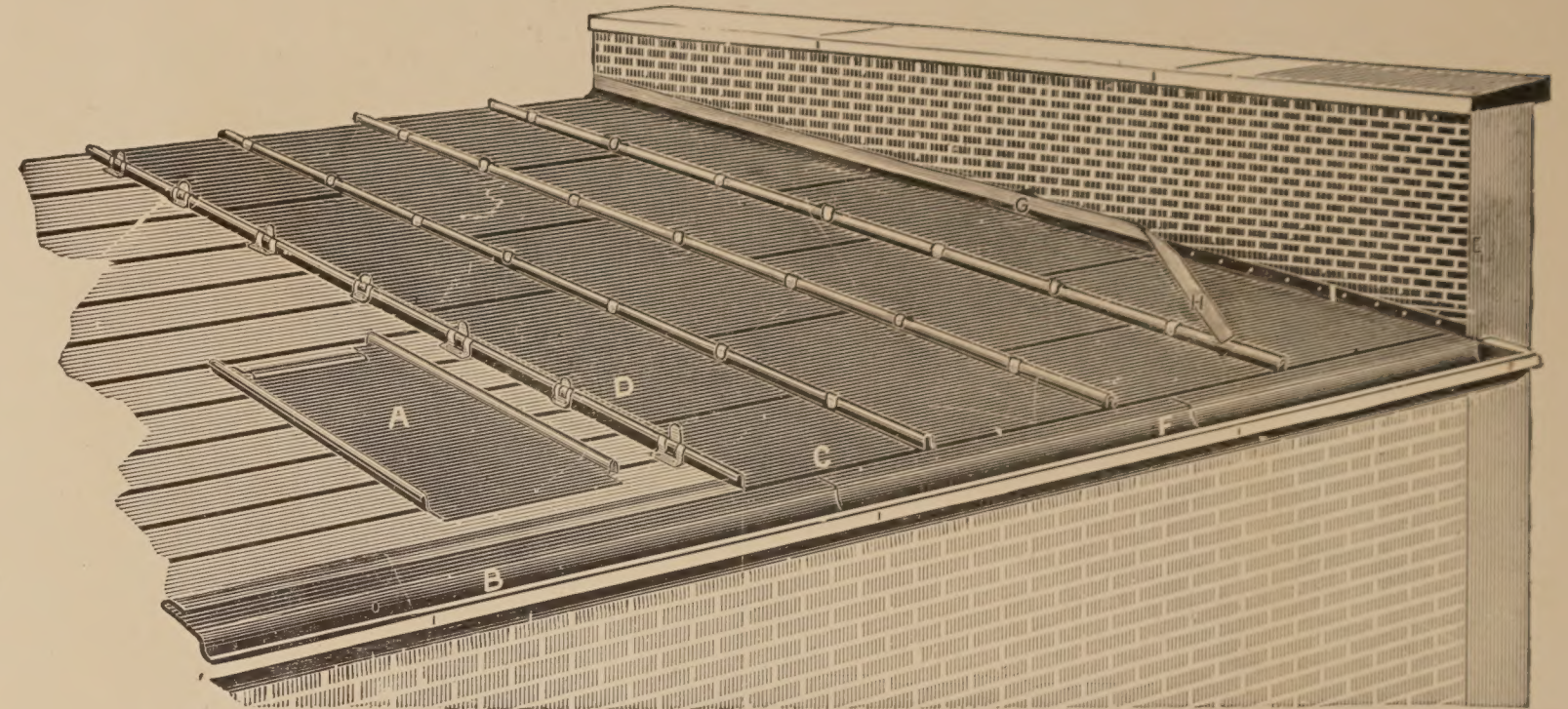
STEEL LAID OVER SHINGLES

Fig. 75



Shows a Shingle Roof being covered with our Standing Seam Roofing.

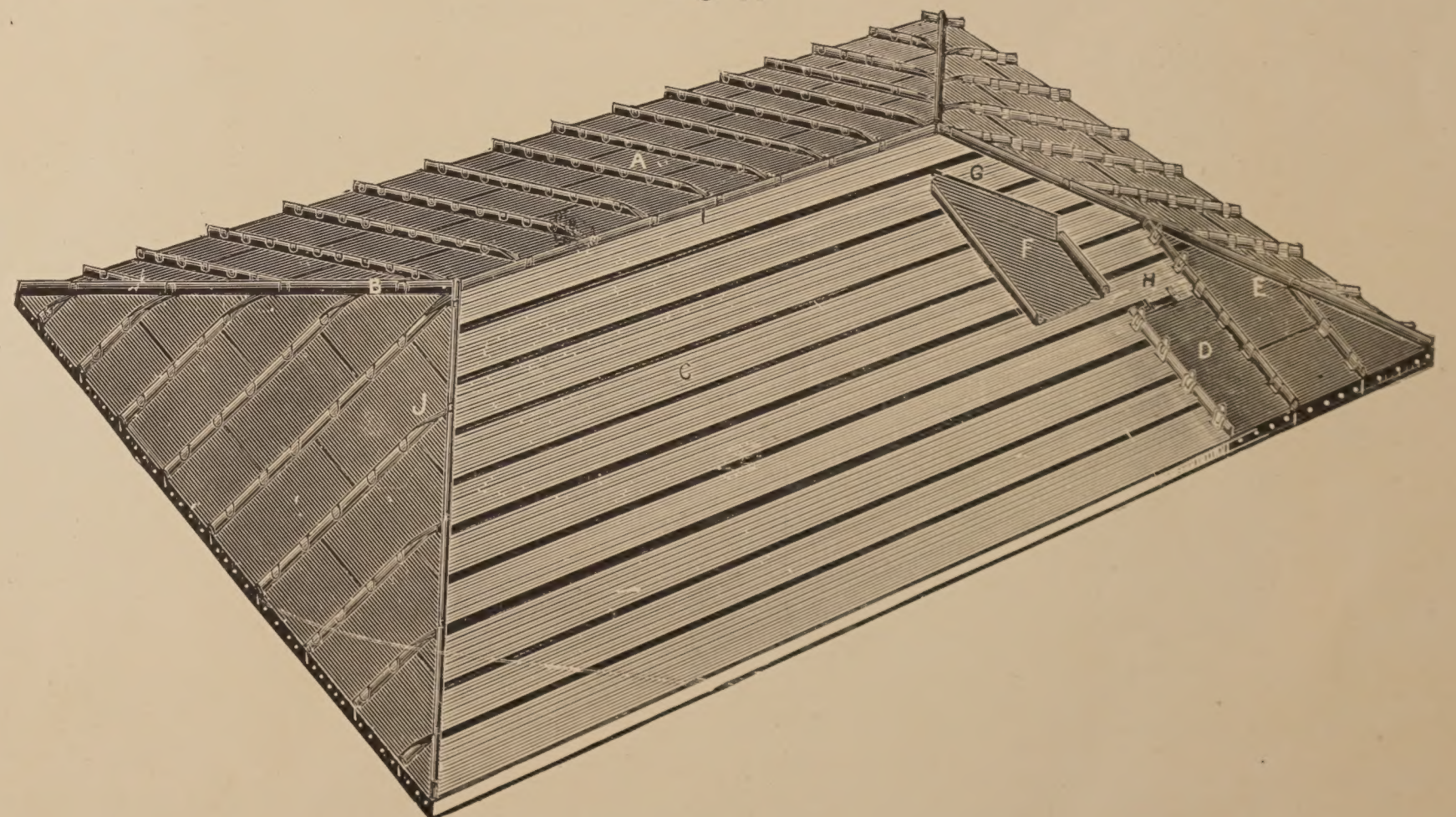
Fig. 76



This cut represents the method of laying roof on a building having a pitch in one direction only

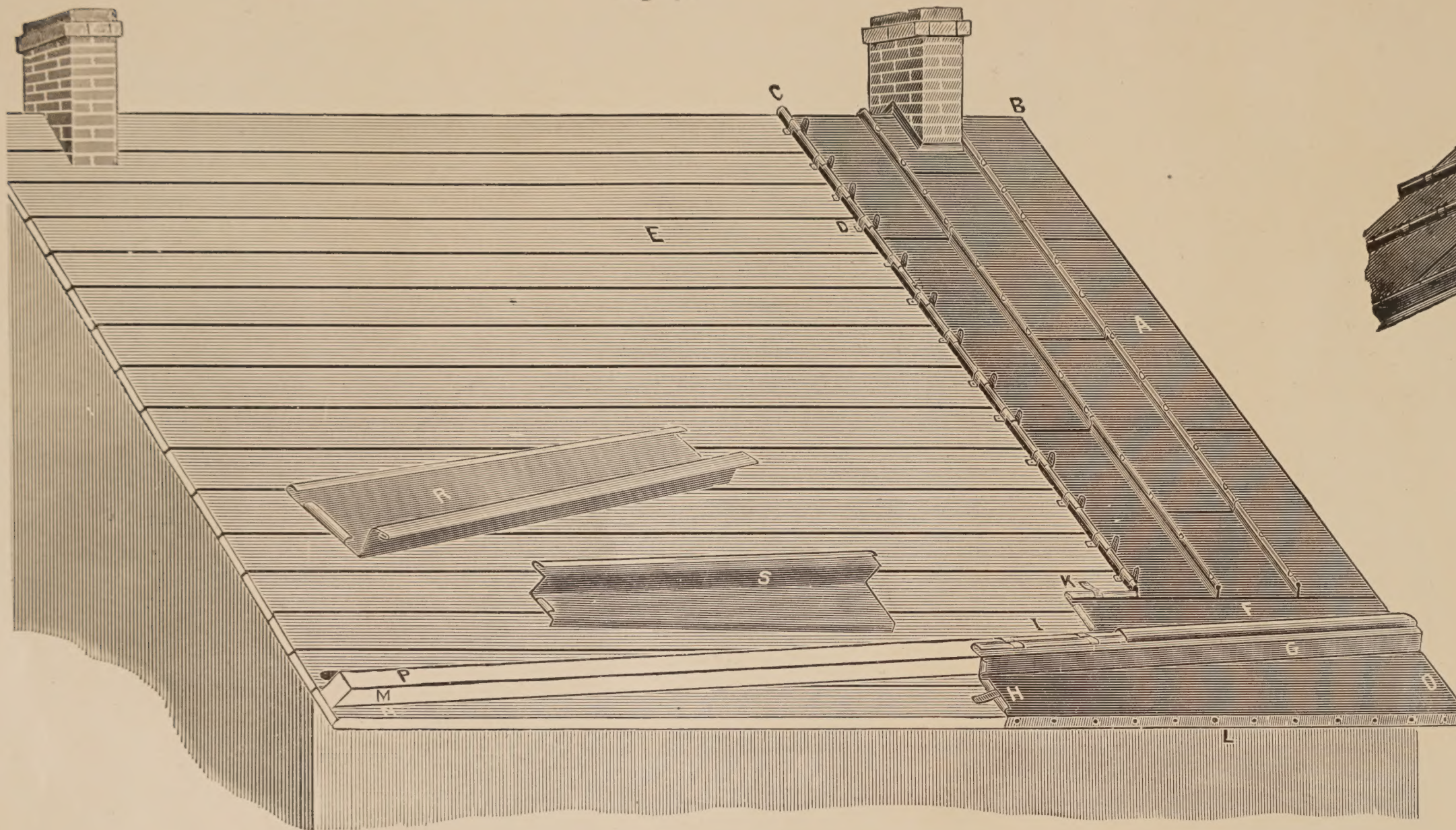
DOUBLE HIP AND RIDGE ROOF

Fig. 77



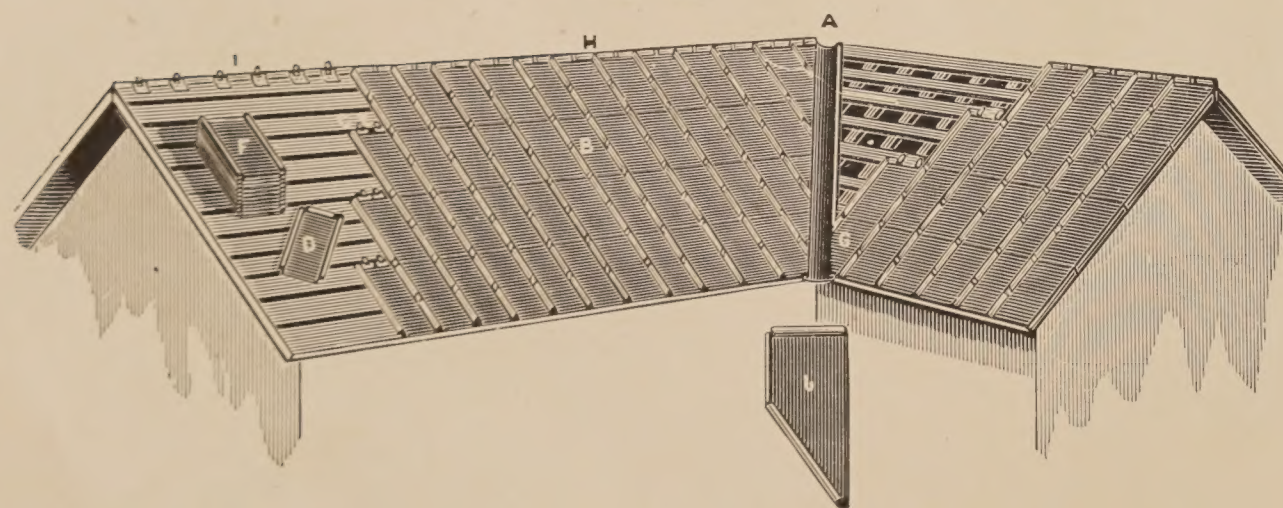
How to Cover a Yankee Gutter and Put in Valley with our Roll Steel Sheets, and Connect any of our Different Styles of Standing Seam Roofing to same, with the utmost safety

Fig. 78



Shows the mode of applying our Pressed Standing Seam, Cleat, and Explanation covering a Yankee Gutter.

Fig. 79



Shows the manner of laying Standing Seam Roofing over Sheathing and slats on roof having valleys.

Our Sheet Metal Materials in the hands of an experienced mechanic produce more satisfactory results than all other substitutes

Explanation of Fig. 78

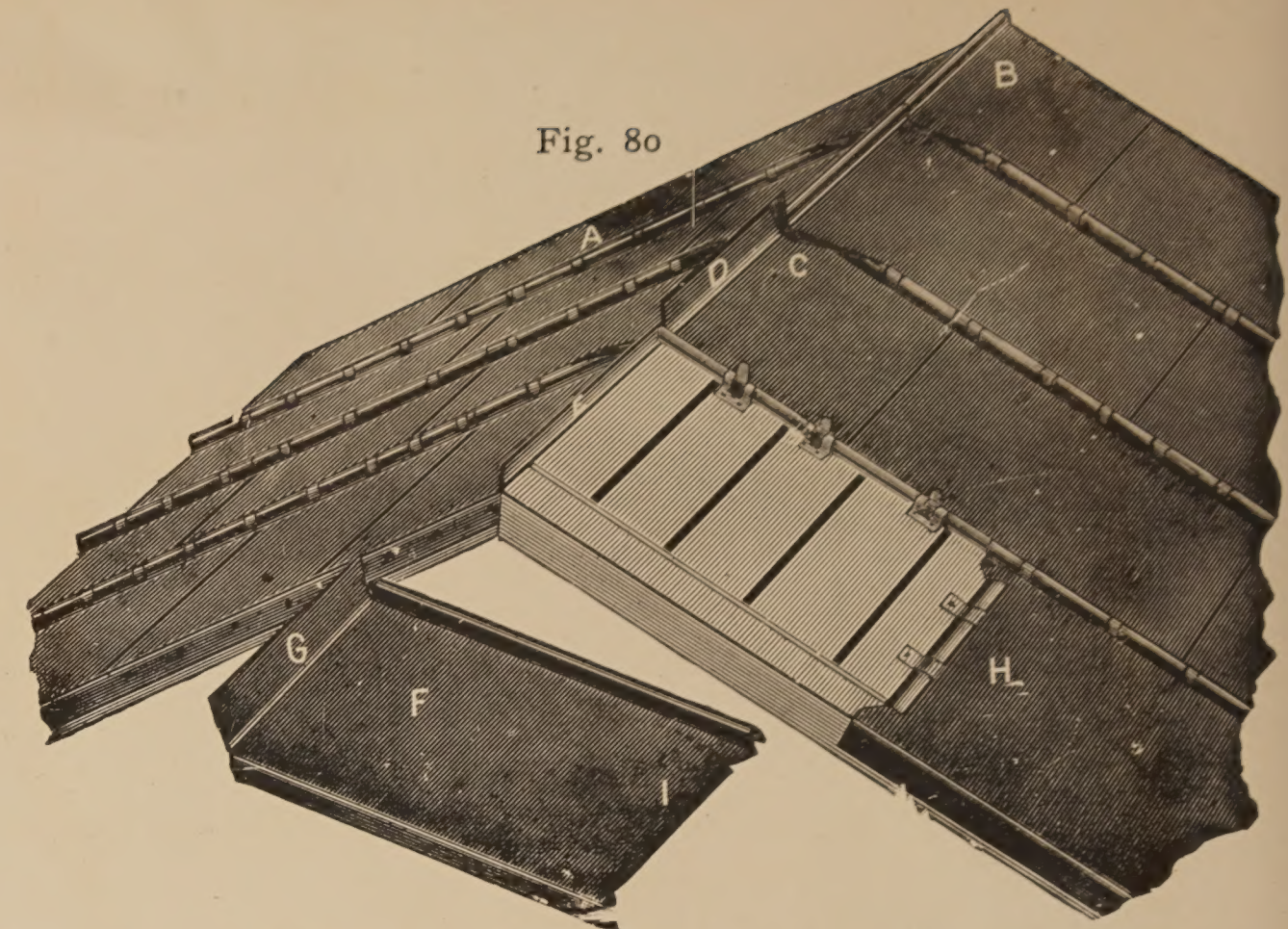
A—Roofing finished. B—Comb finished. C—Inside Standing Seam squeezed and cleated. D—Outside steel sheets applied below Yankee Gutter boards. E—Sheathing below Yankee Gutter board. F—Cleat. G—Sheathing boards. H—Inside lining of Yankee Gutter run up 12 inches. I—Yankee Gutter board covered. J—Joint on end of sheet. K—Hook flange turned on sheet for gutter sheet R. L—Cleat for gutter sheet, lock cross seam turned. M—Flange turned and nailed. N—Yankee Gutter board, 4 inches high. O—Yankee Gutter, top face 2 inches wide. P—Sheet prepared to lay in upper side of gutter. Q—Lower sheet prepared to join letter H. With careful work, an excellent job can be done, and a gutter made that will never give trouble. This cut illustrates commencing covering the Yankee Gutter. When doing the work, always commence at lower end to cover, and work to highest point; then the hooked joint will not leak.

To make foundation for Yankee Gutter, take scantling 2x3 or 4 and fasten it to bottom of roofing boards, viz.: At one end commence about 14 inches from eaves, and to finish taper down to 2 inches at eave; this will give 12 inches fall for the water run in the length of building.

Explanation of Fig. 79

B—Partly finished side. H—Finished ridge. I—Partly finished ridge. C—sheet mitred and hooked in valley. A—Valley laid of sheets prepared for valley in roof. D—Sheet with end joint made. G—End cleats. F—Sheets as shipped. J—Mitred sheet prepared to fit in valley, lower cross joint turned.

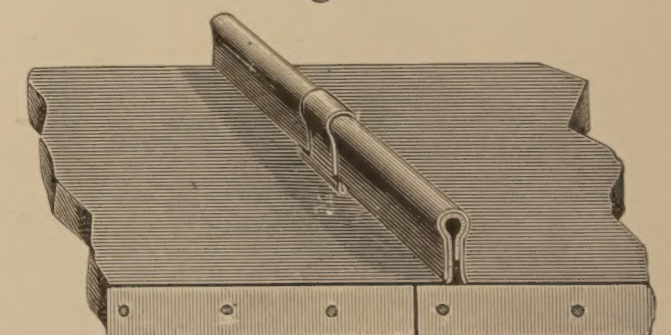
Fig. 80



Shows how to lay Pressed Standing Seam or Roofing on a pitch roof.

Fig. 80 explains the method of laying Pressed Standing Seam Roofing on a pitch roof and the manner of forming the comb without the use of any extra pieces. It also shows the method of securing the edges at sides of roof. A—Side of roof completed. B—Ridge or comb as it appears when completed. C—Standing Seam hammered down and formed into a comb. D—Extreme end of sheet, having two-inch margin turned up to form comb. E—Opposite side of upper end of sheet turned up one inch—over this is folded one inch of the sheet on the opposite side of roof as in D. This folding of the end of sheet over the opposite one forms a solid ridge cap all from the sheets proper, and only requires a little careful and patient work to accomplish it. F—Sheet formed ready to place in position on roof. G—Two-inch seam turned for comb. H—End cleats in position at upper end joint of lower sheet. I—End joint formed on lower end of sheet ready to hook into upper joint of sheet H. This finishes the laying, and, when done with care, makes one of the most perfect and desirable roofs ever laid.

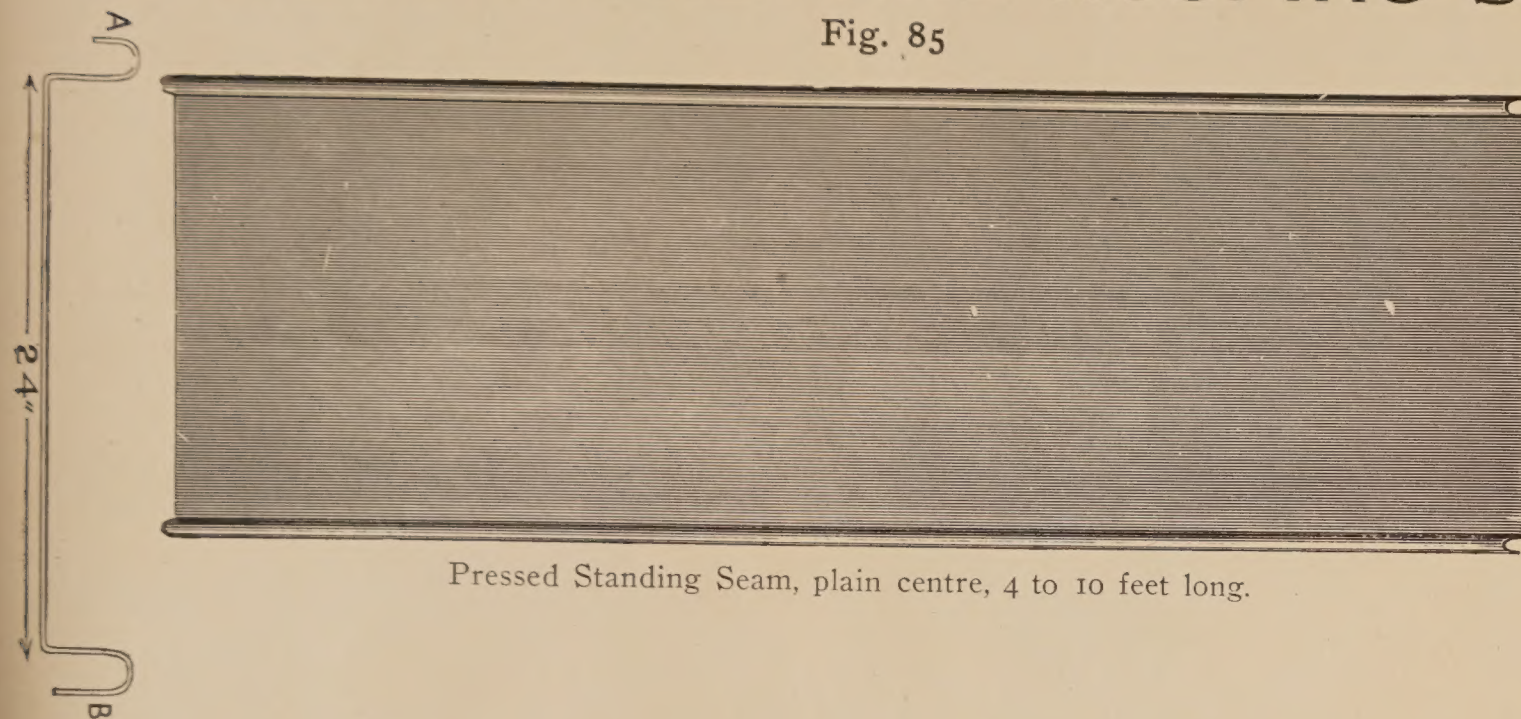
Fig. 81



Shows Standing Seam finished. Also method of turning down and nailing edge along the eaves when the building is not provided with a cornice or box gutter.

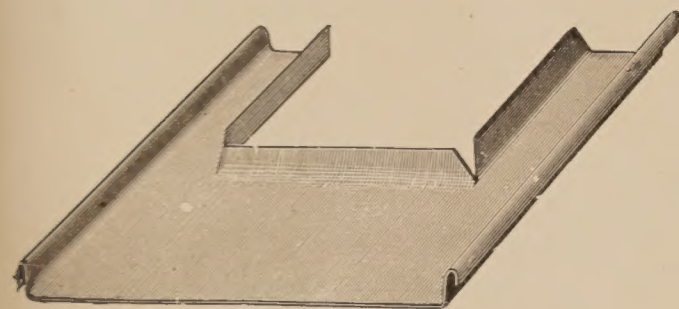
HOW TO PREPARE ROOFING SHEETS FOR LAYING AND FLASHING

Fig. 85



Pressed Standing Seam, plain centre, 4 to 10 feet long.

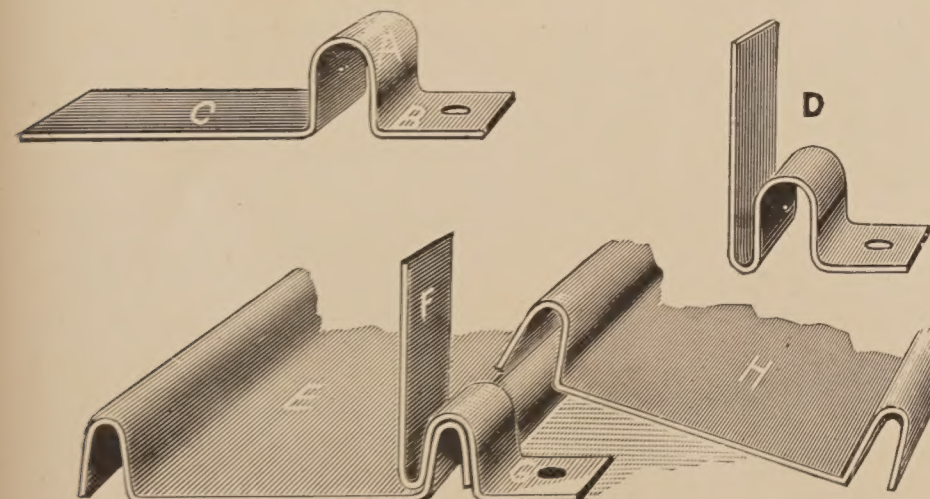
Fig. 83



Shows sheet prepared to fit around chimney, scuttle, or skylight frames.

In preparing the steel sheet to fit openings, it is necessary to provide for a 3 or 4 inch turn-up flashing, so in marking the sheet where to cut, always allow for the 3 inch part to be turned up, and cut out the angle or square piece first; then turn up the amount provided for at right angles. This will allow the opening in sheet (see Fig. 83) just the right size to get around whatever you have fitted it for, then counterflash as in Fig. 82.

Fig. 84



Shows mode of using double fold cleat to any of our Pressed Standing Seam roofing plates.

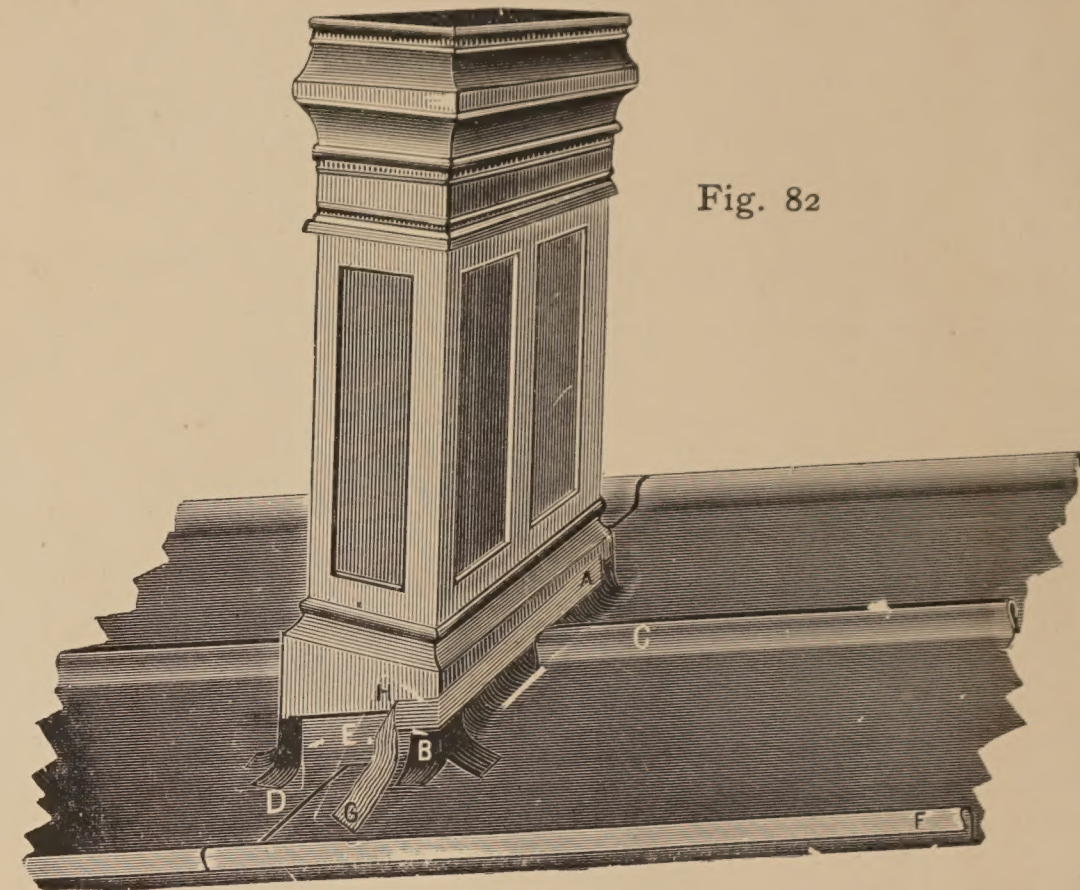
A—Collar of cleat for inside seam. B—Nailing foot. C—Inside folding arm. D—Arm in perpendicular position. F—Applied to inside standing seam. G—Nailing Foot. E—Inside sheet. H—Outside sheet. When all are in place, the seam to be squeezed together.

Fig. 90



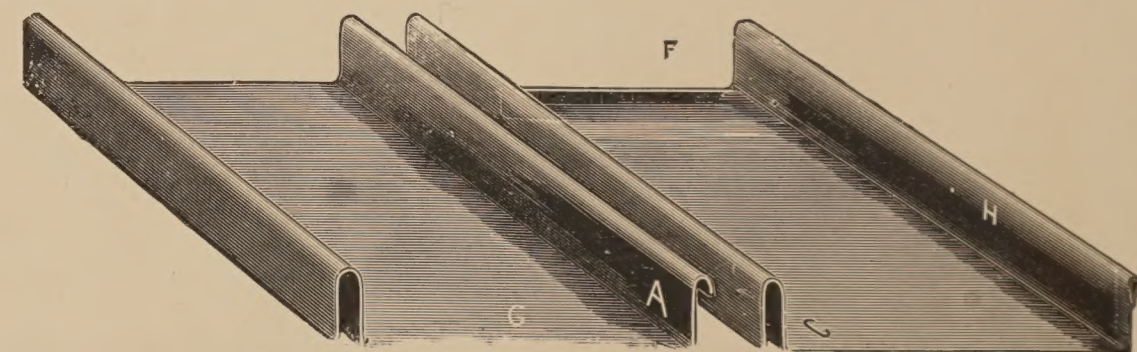
Cleat, 4 1/2 x 1 in. shipped straight.

Fig. 82



Shows more of flashings around chimneys, skylights, frames, etc. E—Flashing turned from main sheet. D—Cross Joint. C—Standing Seam closed. B—Fibre patch to cover opening at cut corners. F—Standing seam. G—Fibre flashing. A—Fibre counter-flashing finished.

Fig. 86



Shows the application of Tongued Cleats and the forming of the End Joint, closing inside Standing Seam before placing Tongue Cleat.

ALWAYS CLOSE SEAM H, AS IN FIG 80, BEFORE PLACING ON CLEAT

ALWAYS PUT ON END CLEATS, AS IN FIG 80

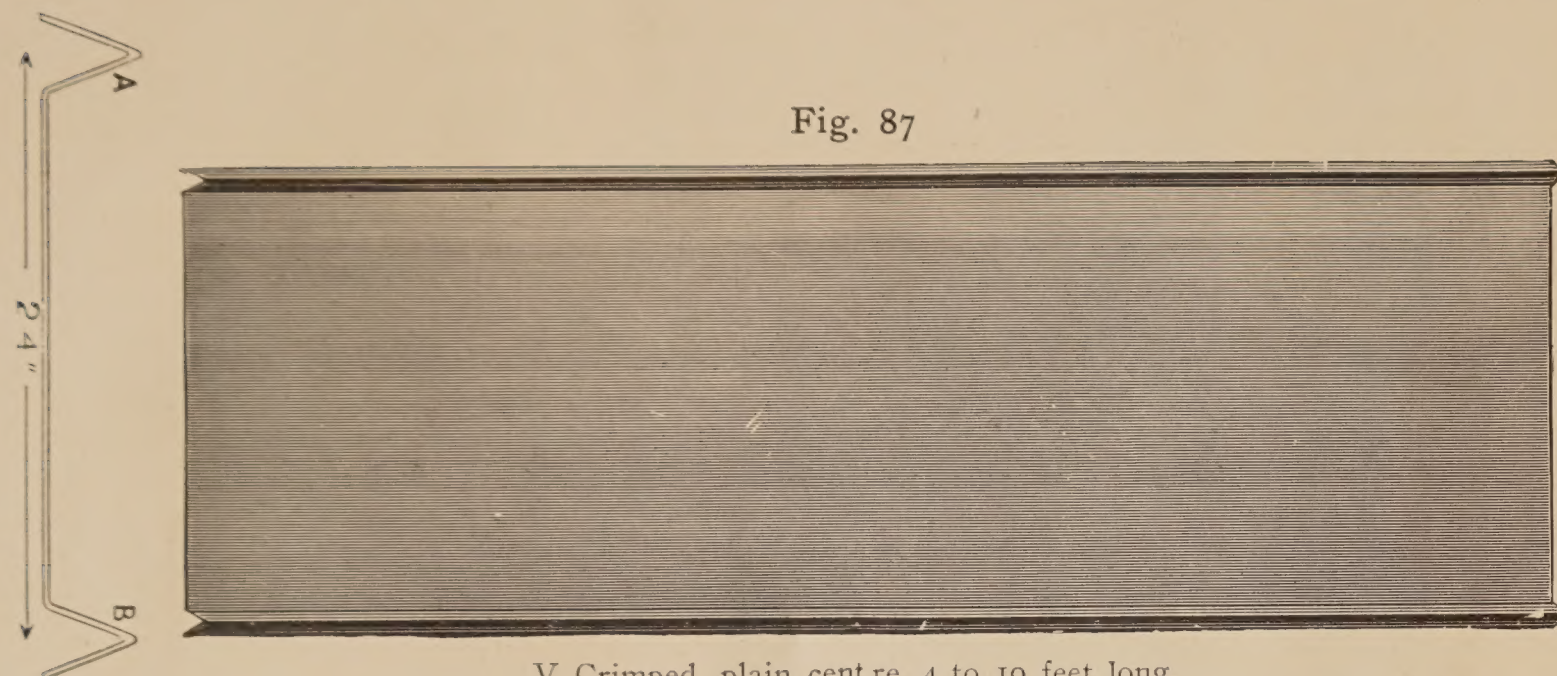
We furnish Tools for laying the Roof, and charge actual net cost for the same, as follows:

Squeezing Tongs, per pair..	\$2.50	Snips	\$1.75
Edging Tongs	2.50	Mallet	.25
Jointer	.75	Total	\$7.75

We send full set, or any of the above at prices named; but many of our customers only need the Squeezing Tongs and Jointer. We will allow the same as charged for them if returned in good condition, free of expense to us.

After the roof is all laid, mix the dry paint (ten pounds) with boiled linseed oil, one pint japan drier to the gallon, and apply with a flat brush.

V CRIMPED ROOFING

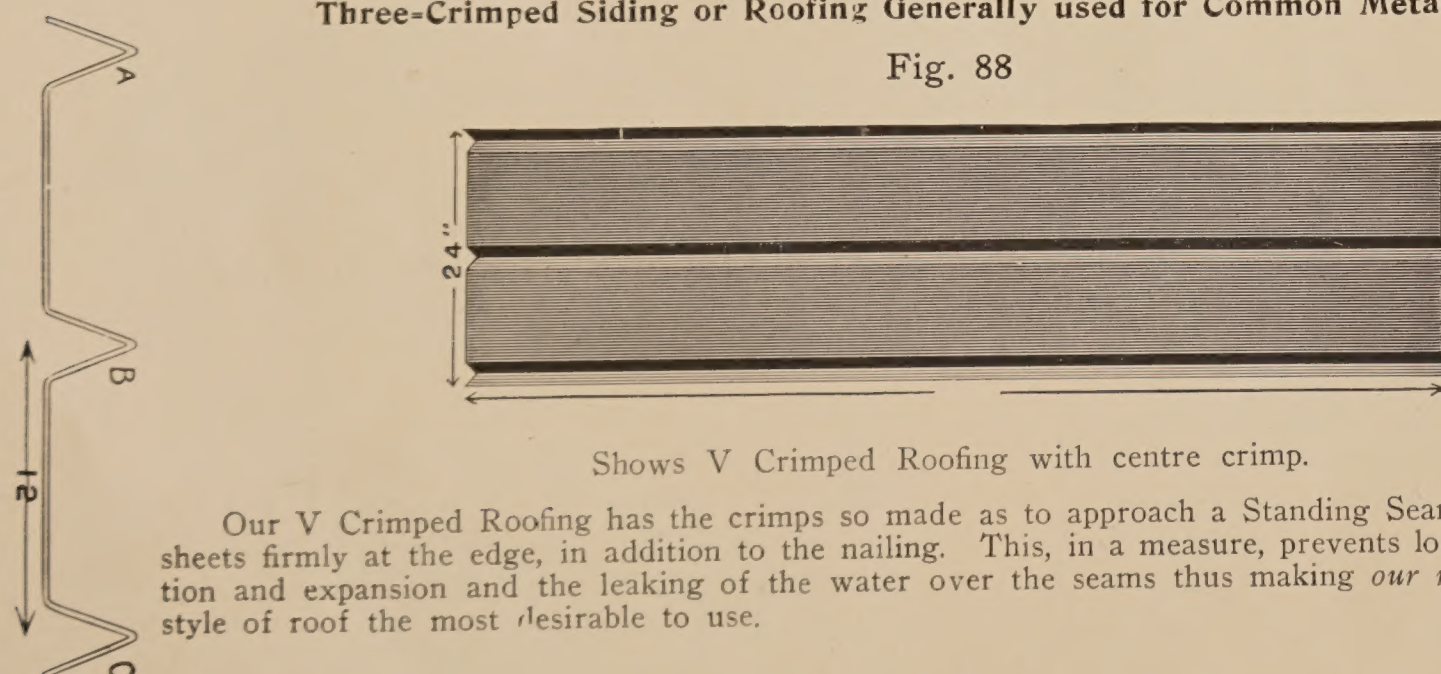


V Crimped, plain centre, 4 to 10 feet long.

For Shed Roof, or for cheaply constructed buildings, the V Crimped Roofing will answer.

This style of Iron Roofing has been used more extensively than any other kind; in fact, the sales of all other styles combined would not equal the sales of the V Crimped. The fact that it is the oldest device used for putting on sheet iron roofing explains why so much is used and why it is so well known. The manufacture of iron roofing for a number of years was confined to one or two firms, and the principal consumers were large manufacturing firms, individuals not adopting its use until within a recent period, as they confined themselves to the use of slate, tin and shingles for covering dwellings, warehouses, barns, etc. However, within a few years, numerous patents for improved roofing devices have been issued. Inventors have given this subject great study and spent large sums of money in machinery and experiments. Iron Roofing, to be effective, should possess the following points: 1st. Be so constructed as to resist the elements. 2d. Be easily applied. 3d. Be so constructed as to avoid waste in fitting angles, valleys and around openings.

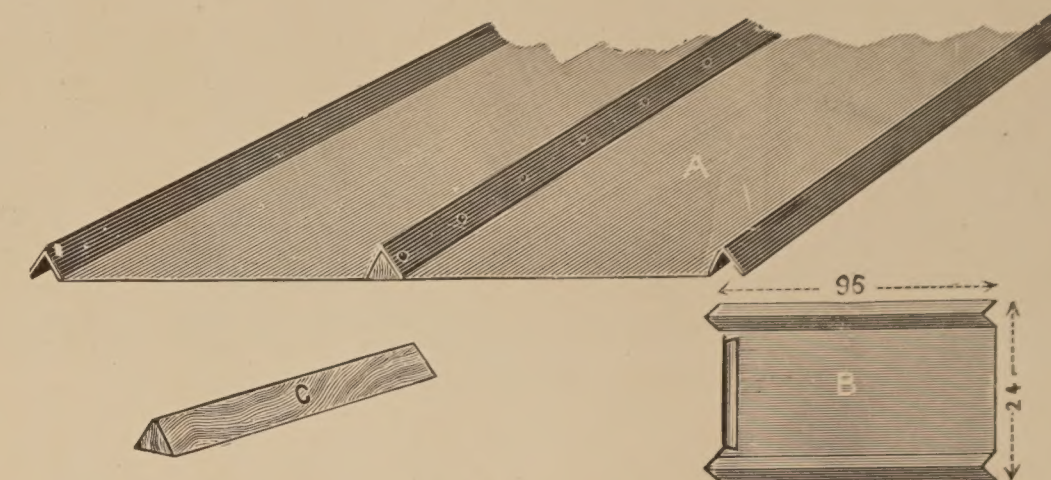
Three-Crimped Siding or Roofing Generally used for Common Metal Siding



Shows V Crimped Roofing with centre crimp.

Our V Crimped Roofing has the crimps so made as to approach a Standing Seam, thus binding the sheets firmly at the edge, in addition to the nailing. This, in a measure, prevents loosening by contraction and expansion and the leaking of the water over the seams thus making our manufacture of this style of roof the most desirable to use.

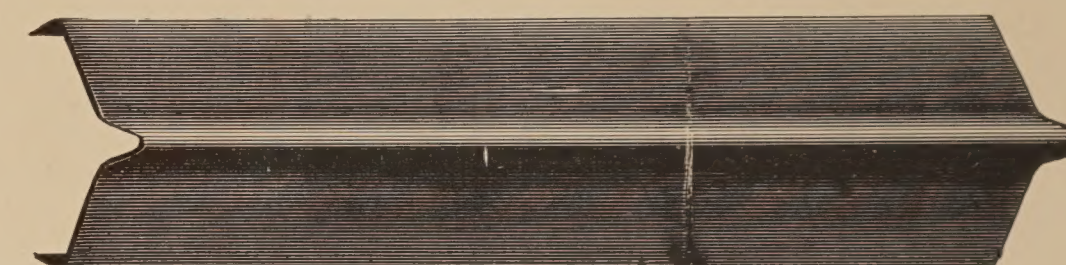
Fig. 89



Shows V Crimped Roofing (old style), using V Stick Centre.

A—Represents manner of laying Sheets upon sheathing slats or rafters. B—Sheet crimped. C—Wooden strips used between the V Crimps to stiffen them, and allow for driving nails through the Sheet to fasten Sheets and Stick to Sheathing or rafters.

Fig. 26



Shows Metal Combing Cap, used with Standing Seam and V Crimped to finish Ridge and Hips.

The above Capping made to order, in odd sizes, to suit the building for which it is to be applied.

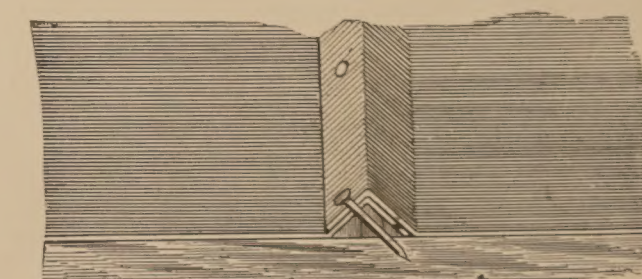
Fig. 135



Shows how to make Cross Seam Joint.

Always cleat Cross Seams, same as in Standing Seam.

Fig. 91



Shows at what point to drive Nail on Side Seam.

Distance apart, 10 inches. We advise using a lead washer under nail head; this insures a tight seam, when nailed, and prevents the sun's rays from drawing the nail. The additional cost is small, when its advantages are considered.

ROLL AND SEPARATE CAP STEEL ROOFING USING STRAIGHT METAL CLEAT

This style of Steel Roofing is especially adapted to flat roofs. Wherever flat seam tin or gravel can be laid (1½-inch fall to the foot) this roofing can be applied. These rolls are made up of 6¼ sheets 8 feet long, or 5 sheets 10 feet long, double locked. The joints are neatly and closely made. We furnish the most perfect, simple, most easily and rapidly laid Roll separate Cap Roofing on the market. We use in this, as in our other style of roofing, the very best quality of soft annealed steel.

Fig. 93



Shows Roll Cap Steel Roofing as shipped.

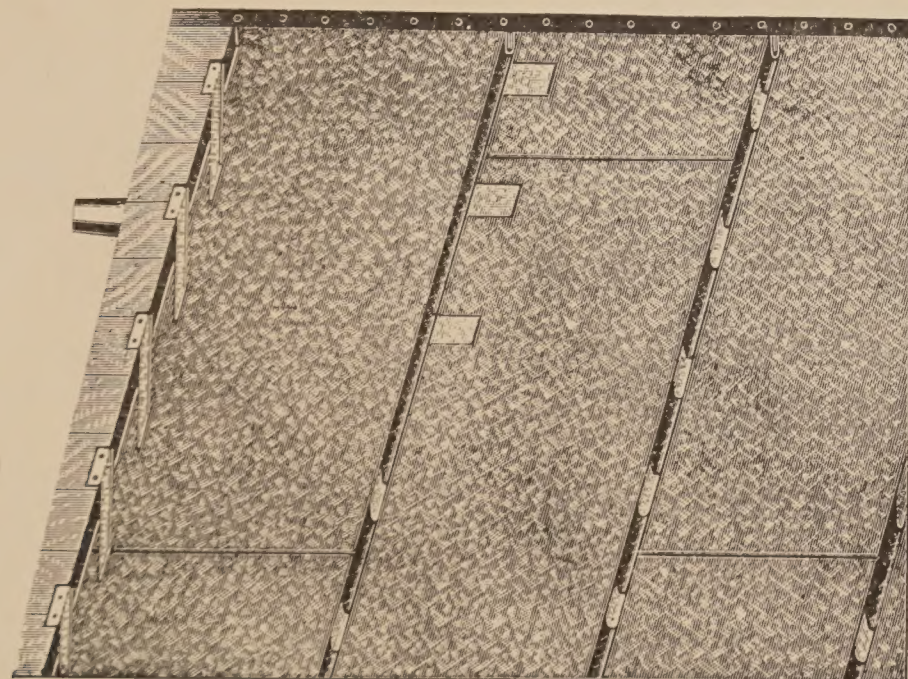


Shows the Roll Cap Steel Roofing and Trimmings.

This style of roofing is so simple, extra skill is not required to lay it, and it can be laid more rapidly than other styles of roofing.

This is a very desirable roof where buildings have the roof pitched one way only, with only a slight fall and long courses. We offer you the best Roll Cap Roofing ever made. (6¼ 8 feet or 5 10 feet) sheets double locked together.

Fig. 334



Shows roofing completely laid, seam finished.

Fig. 92

Fig. 94



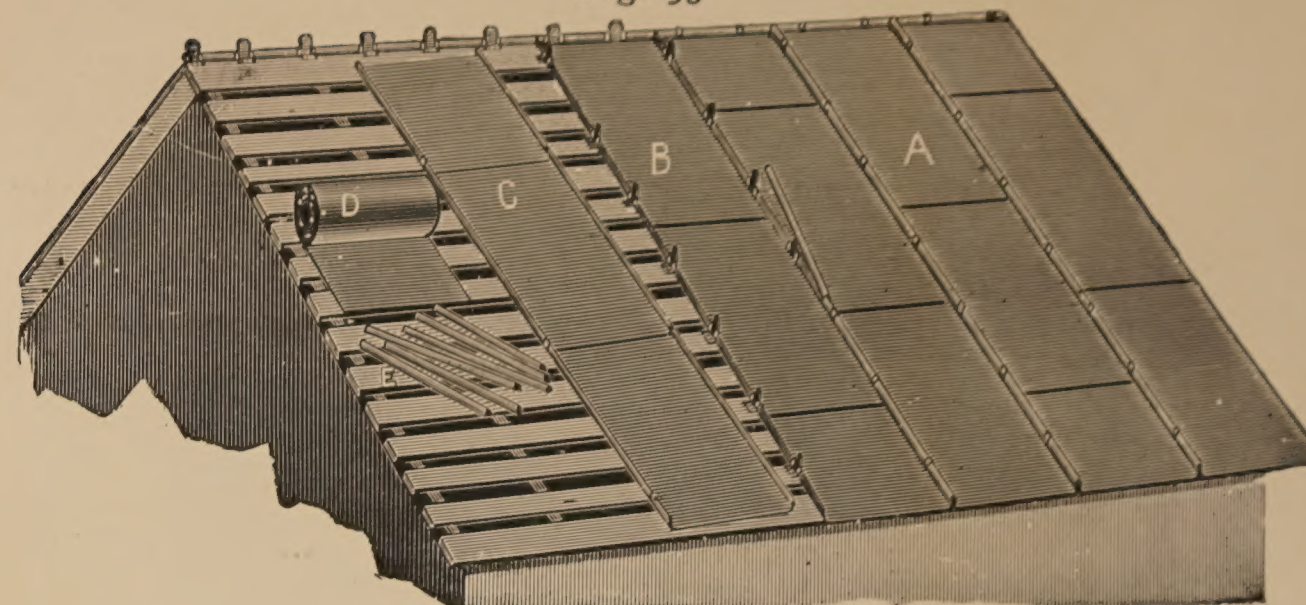
Straight Cleat.
1x4 inches.



Shows Barbed Wire Nail,
shipped with roofing.

ROLL AND SEPARATE CAP ROOFING APPLIED

Fig. 95



Shows this style of Roofing in course of laying.

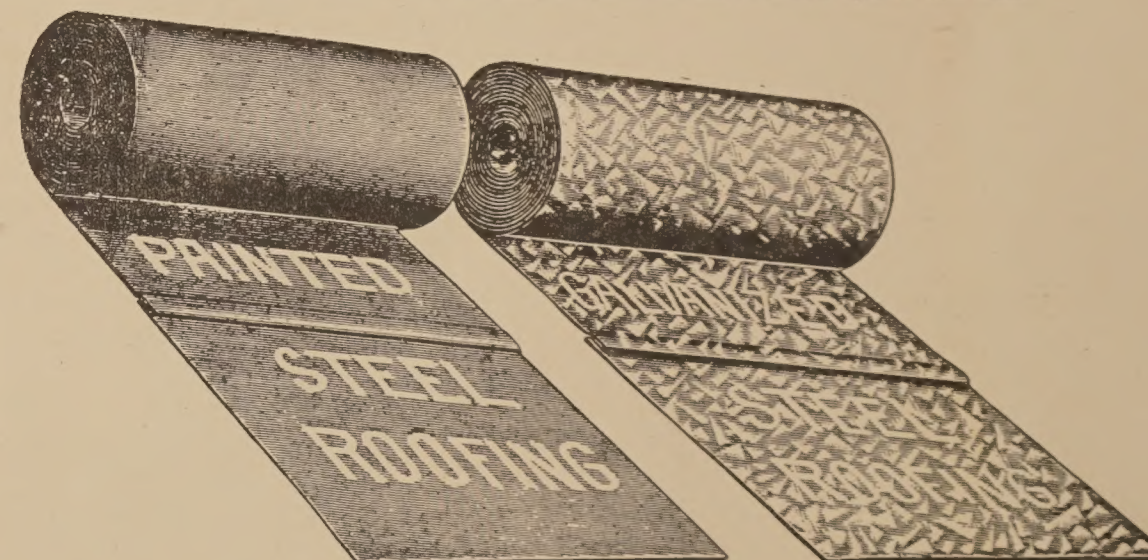
A—Roofing finished. B—One course placed against another, with Metal Cap partly placed and ready for the tongue of Cleat to be pressed over Cap and squeezed together. C—Course prepared ready to be placed in position, standing edge all turned. D—Roll of roofing. E—Metal Roofing Caps. The method of making hips, combs, and valleys is just the same as description for laying Pressed Standing Seam.



WHEN USING STEEL ROOFING WE RECOMMEND our customers to place a layer of paper on the sheathing before applying the steel, especially on dwellings. The paper is a non-conductor and preserves a uniform temperature under the roof, also stopping condensation. It pays the consumer to use paper lining.

Fig. 96

Has Double Seamed Cross-Locks which cannot come apart nor leak.



Prepared from the best quality of soft metal Sheets, No. 28 U. S. Standard Gauge, 96 to 120 inches long.

The sheets are trimmed with squaring shears, then thoroughly painted on both sides by machine, with our latest improved paint, and connected at ends by our Patent Double-Seamed Cross Lock, not by the common single hook lock.

We use Red Oxide Paint, unless graphite painting is ordered.

Paint is the protection, and it is economy to use the best. The cost is but little more, while the durability will be far greater.

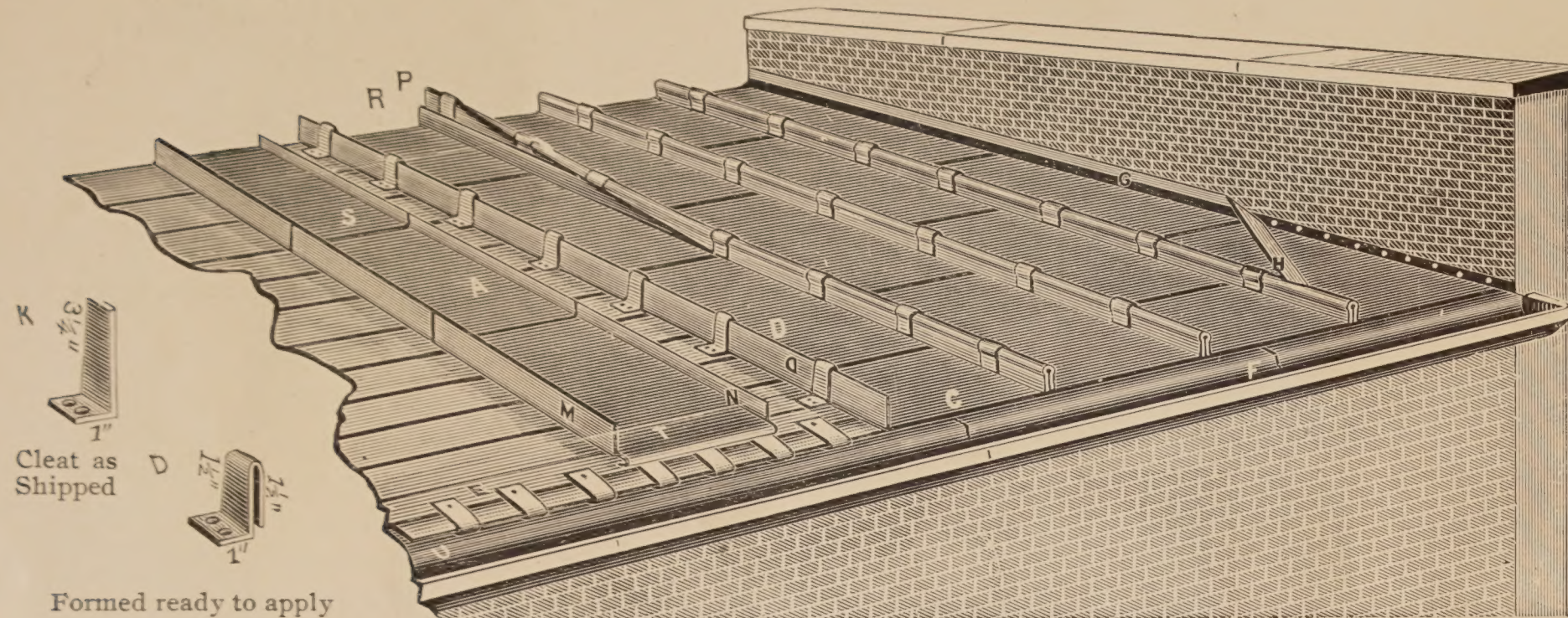
Galvanized roofing should be used where steam, sulphuric acids or other injurious substances are encountered.

We do not paint galvanized roofing, except when so ordered, for which we charge accordingly.

SELF-CAPPING STEEL ROLL ROOFING SUPPLIED WITH PATENT SWAGED CROSS SEAMS

This style of Roofing is quite popular with the tinning trade, as it is similar in applying to Standing Seam Tin roofing, quickly laid, adjusts itself to uneven surfaces of sheathing, or over old shingles. Directions at large, on this page, apply to this method of placing on cleat.

Fig. 97

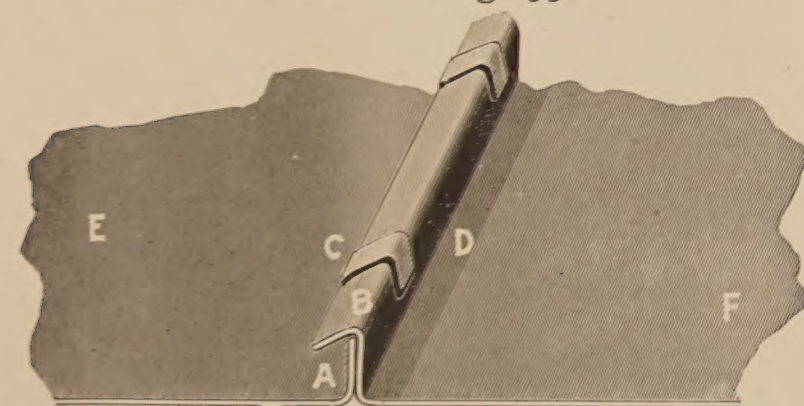


Formed ready to apply

Shows roofing being laid on roof with pitch one way, and box-gutter, building having fire wall at one end; manner of finishing and counter-flashing the same.

A—Course edged up at sides. B—Box gutter lined with steel. C—Roofing course edged at bottom and hooked into box gutter edge. D—Course laid and partly finished. Side cleats applied. E—End cleats in place on folded edge of gutter lining. F—Cross joint in box gutter. G—Fibre counter-flashing applied to edge of roofing turned up and to parapet wall. H—Fibre flashing (see cement directions). KL—Cleats as shipped, and D—Bent ready to apply. M—Long edge turned 1½ inches high. N—Sheet edge turned 1 inch high. P—Long edge partly turned to for cap, by use of double seamer, Fig. 131, making the outside cap entire length of standing seam, end view, Fig. 99. A—Cleat outside fold finished. B—Foot of cleat nailed to sheathing, as in Fig. 97, letter A. C—Roofing plate, high edge. D—Roofing plate, low edge, under cap. R—Single edge butted against high edge in position to receive the low edge turn to form the cap. S—Full course cut to right length and edged ready to put in place. The cleats are intended to be placed 12 inches apart, and two wire nails driven in the foot flange that rests on the sheathing. T—Lock turned to hook into gutter flange. U—Gutter flange turned one inch, then cleated, as in E.

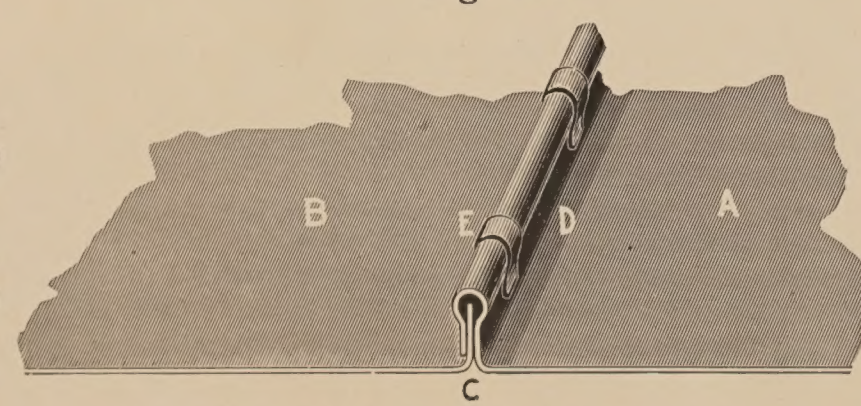
Fig. 99



Shows Standing Seam, half thrown over with double seamer or mallet and dog seamer.

E—First course. A—1-inch Standing seam. B—Top of seam with oval roll. C—Cleat fold. D—Outside edge of seam formed from main sheet, 1½ inch high, and turned over 1 inch. F—Second course.

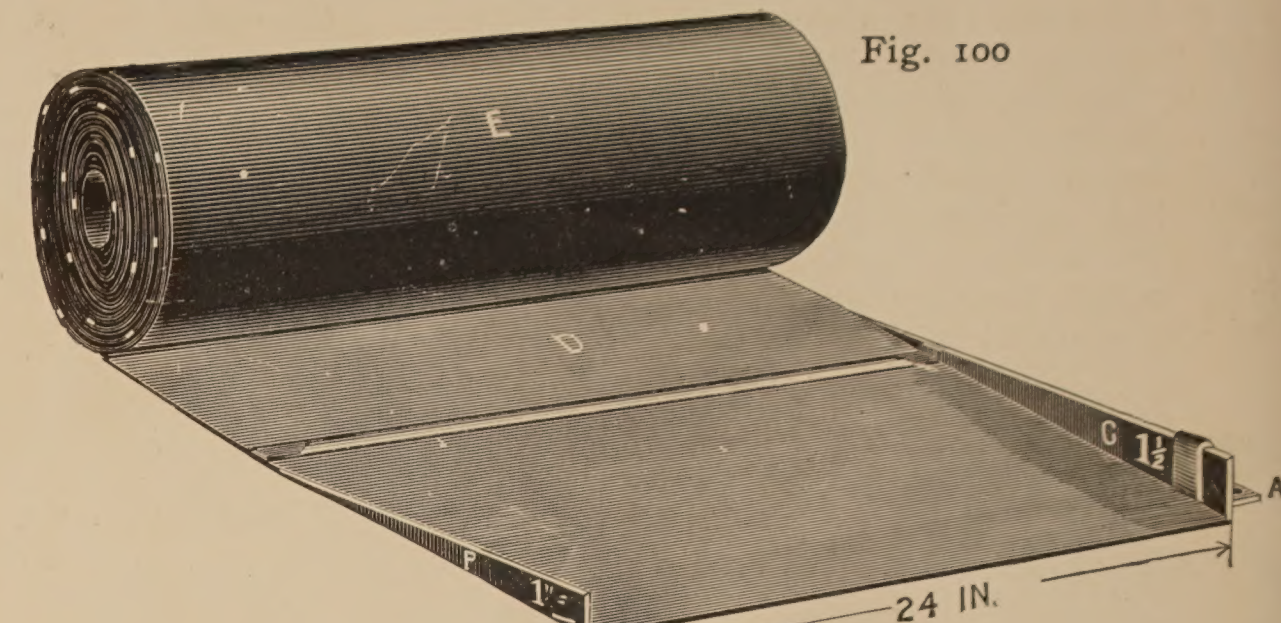
Fig. 101



Shows Standing Seam of Roll Roofing finished.

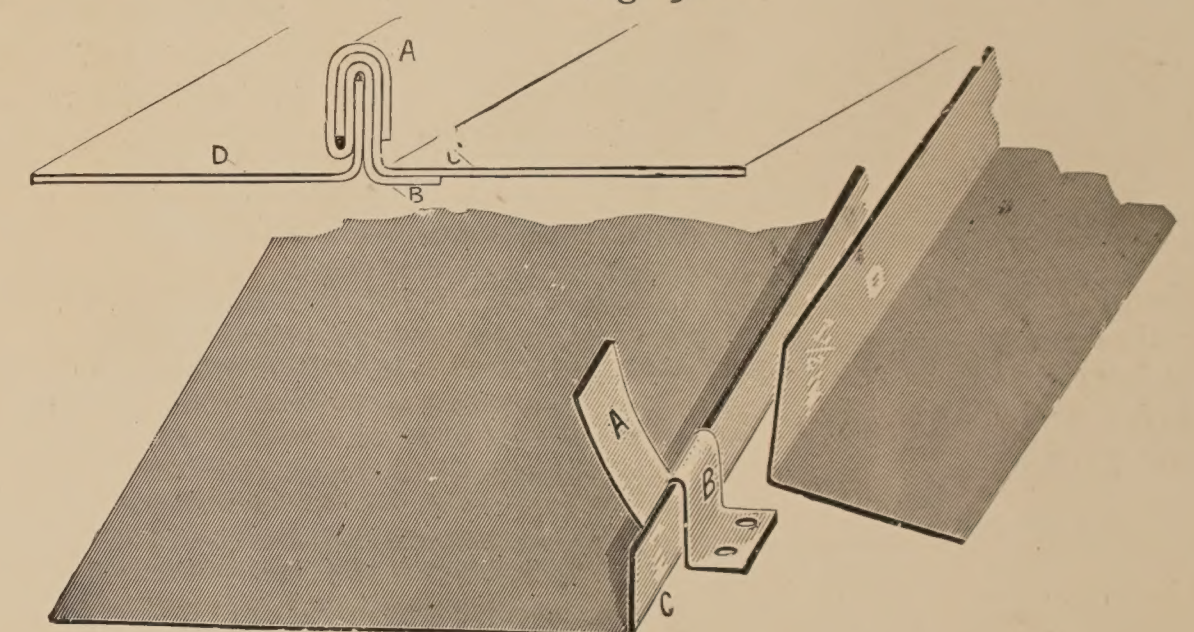
A—First course with 1½-inch seam turned over 1-inch seam. B—Second course with 1-inch seam turned. C—Inside seam. D—Outside seam. E—Cleat folded and closed with standing seam and roofing paper.

Fig. 100



Shows Roll of Steel Roofing. A—Cleat applied. C—Long edge turned 1½ inches. D—Cross Patent Swaged Joint. E—Roll proper; 50 lineal feet, 26 inches wide. F—Edge turned 1 inch high.

Fig. 98



Shows how to prepare Roll and Cap for roofing, using straight, double fold cleat.

A—Outside tongue of cleat to fold over outside seam D after seam D is turned over seam C. B—Outside fold in place over standing seam. C—Standing flange turned 17/8 inches high. D—Outside flange turned 15/8 inches high, to be folded over inside flange or seam C. All to be squeezed together with our tongues, as in sectional view, showing seam finished.

SECTIONAL.—A—Cleat applied. B—Nailing foot of cleat. C and D—Roofing sheets with seam turned up and the longer one folded over the shorter one and cleat end bent over all.

Applies to Roofing in Rolls, Pages 21 and 22. A Word About Cross Seams

Every mechanic who has laid Roll Roofing has found that the old style of angle-locked cross seams would come apart when he began to tong up the Standing seam, which not only delayed him in completing the work, but made it impossible to make a strictly water-tight job.

Our Double-locked Cross Seams cannot come apart and will never leak. When this lock is wanted, add 10 cts. per square to net prices.

CONSTRUCTION OF DOUBLE-LOCKED CROSS SEAMS

Shows end lock turned.

Shows two sheets locked together. Shows sheets locked and cross seam completed.

CLUSTER STEEL SHINGLES

ROOFING, FOR MANSARDS AND SIDING

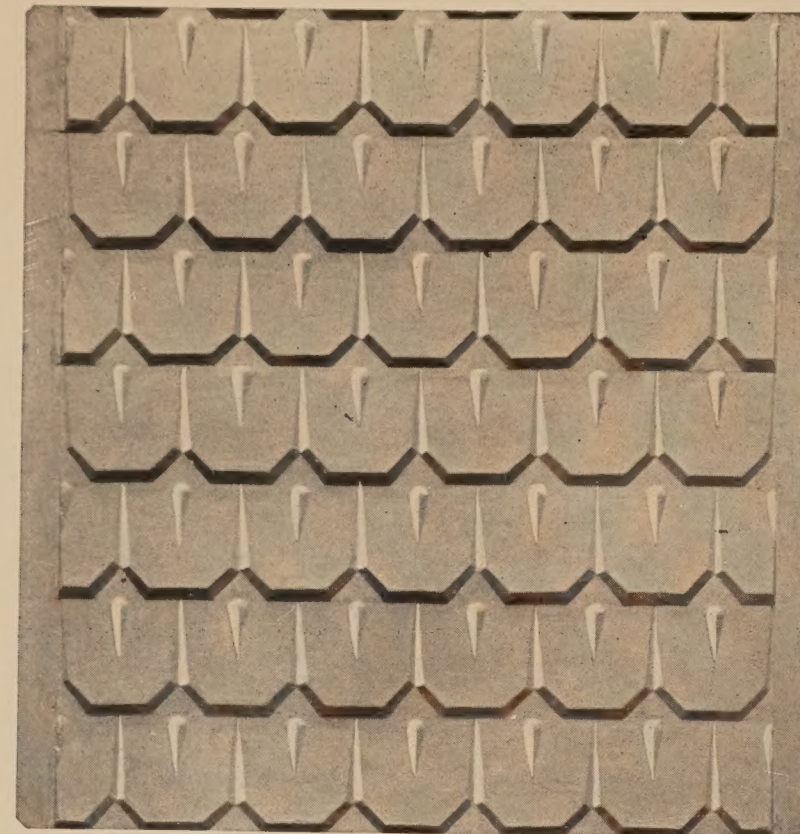
Stock Sheets 81 to 120 Inches Long

Cluster Steel Shingles, Laid on Mansard and Dormer Windows, having Box Gutters

Fig. 102



Fig. 103



Cluster Tile. Size, 25 x 120 inches.
Flat Margin for Siding Gables. All plates on this page are stamped like Fig. 103, with double beaded or standing seams.

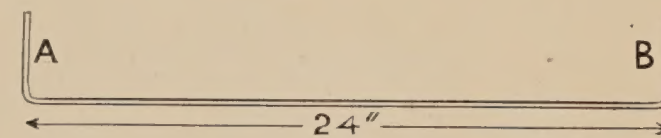


Fig. 104



Shows Cross Joint made with Double Beaded Edges.

The Cross Joint of this Lap is made by lapping the bottom course over the upper course of lower sheet and painting between the plates, then nailing, using lead washer under nail head.

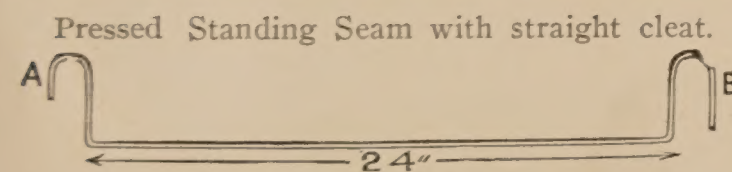
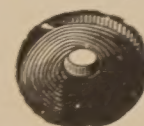


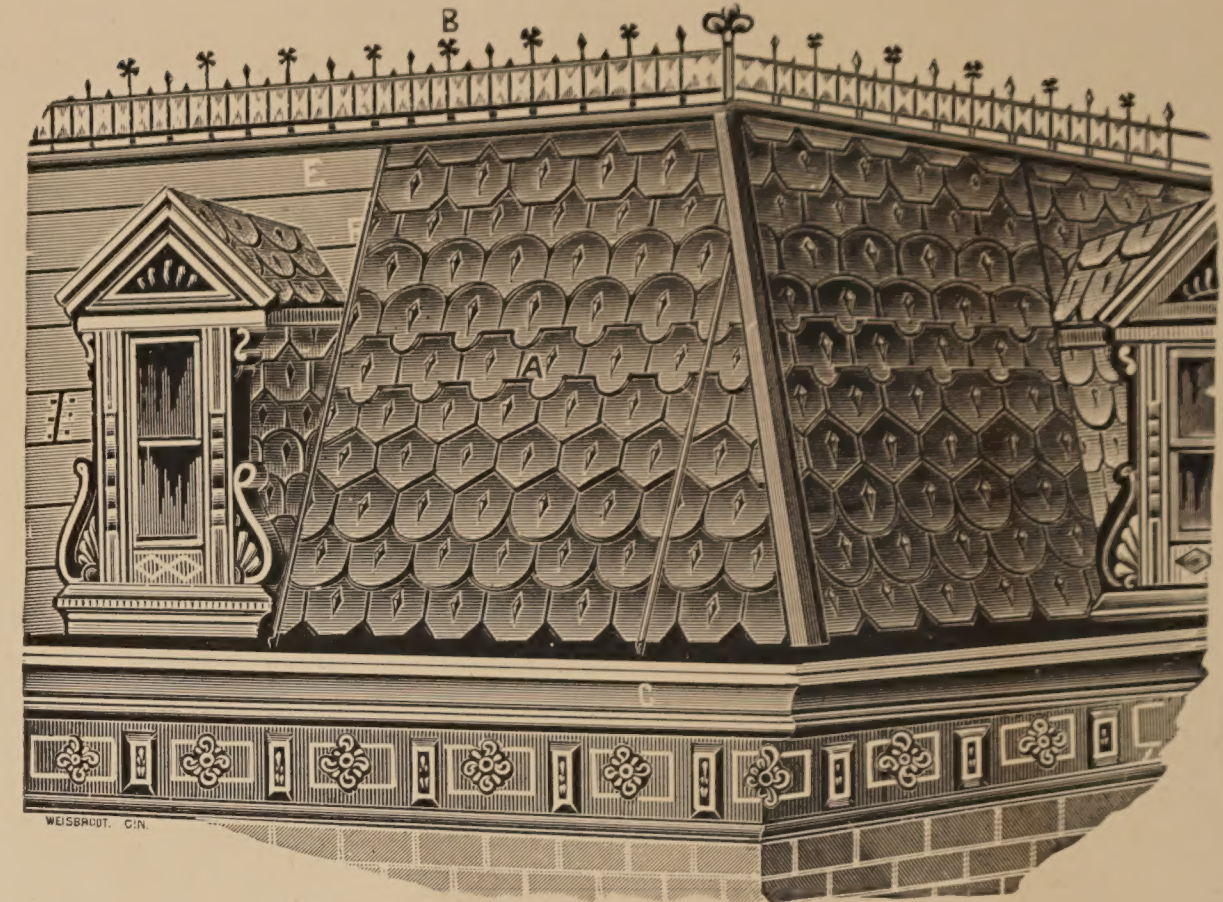
Fig. 3

Shows 1 and 1½-inch No. 13 Wire Nail.



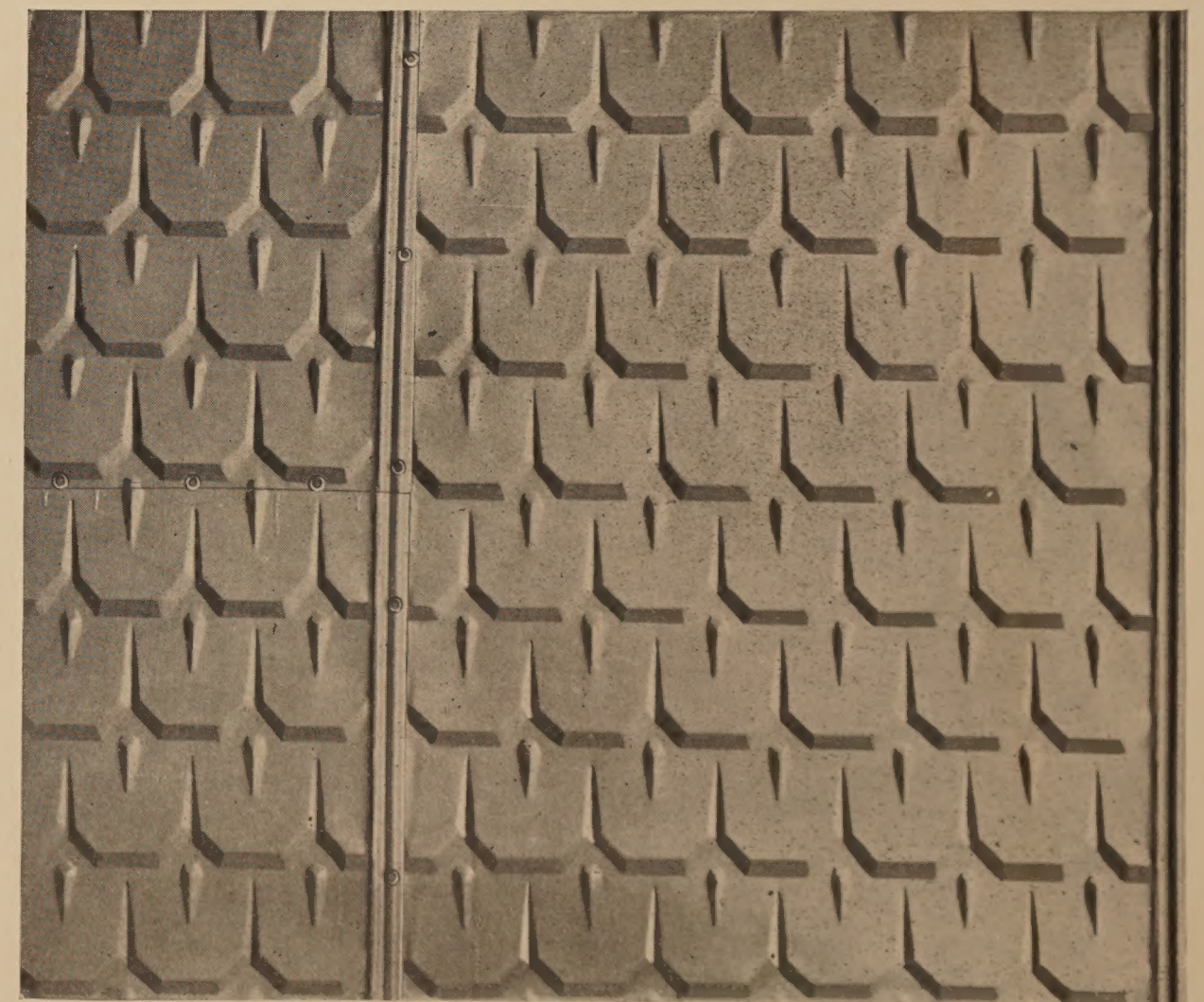
Shows Lead Washer.

Fig. 105



Shows our Steel Tile Shingles, applied to Mansards.
A—Mansard partly covered. B—Iron Cresting. C—Box Gutter Cornice. D—Dormer Windows, covered side and top. E—Sheathing Boards. F—Beaded Edges or flat margin on cluster sheet. Sheets made in length, 2 to 10 feet; width, 25 inches.

Fig. 106



Double Beaded Edges.

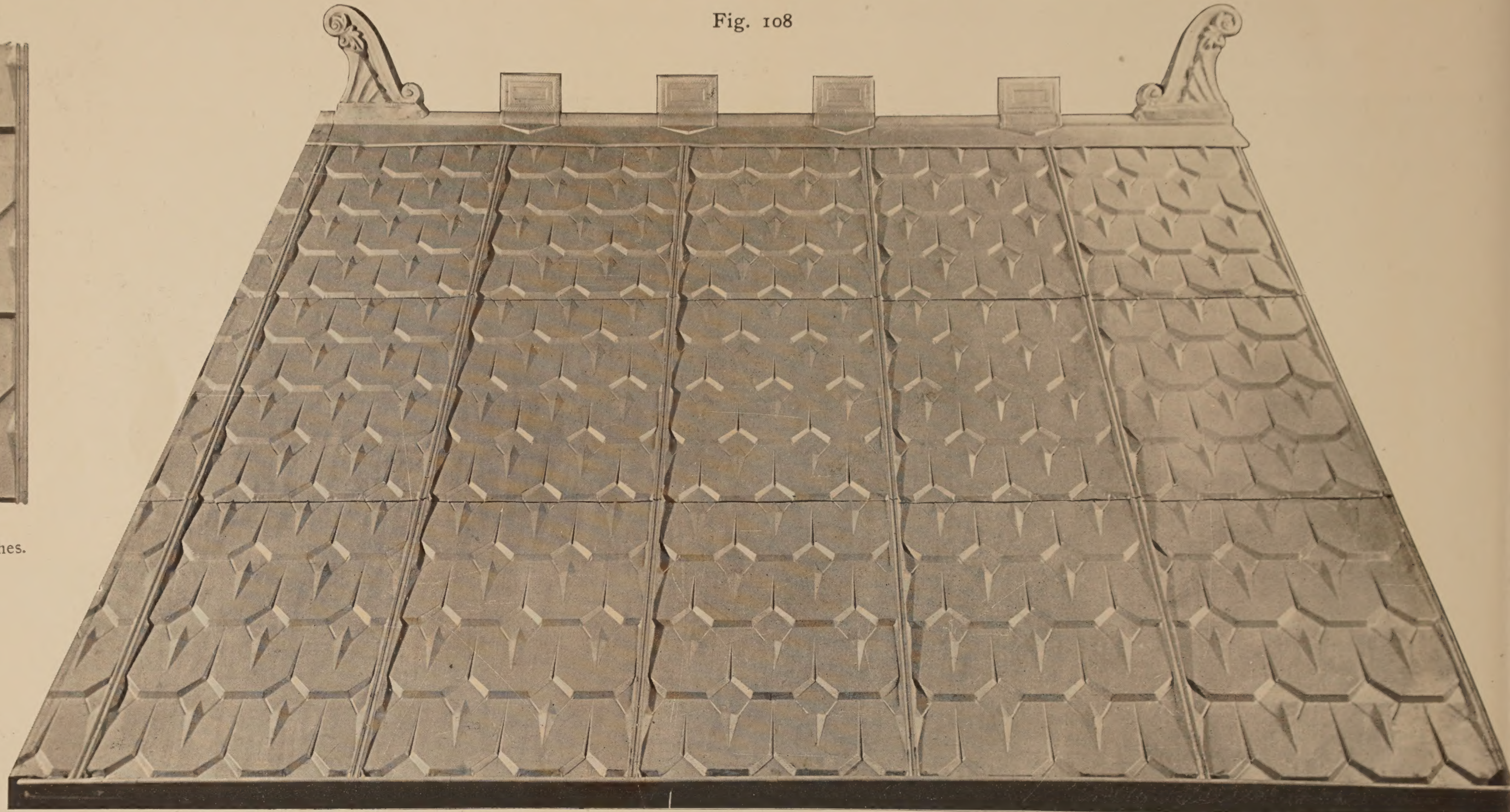
ELIZABETHAN TILE PLATES

Fig. 107



Elizabethan Tile.
Size, Sheet Centres, 25 x 32 inches.
Size of Tile, 8 x 8 inches.

Fig. 108



Showing manner of applying, using wire nail and lead washer. A perfect roof covering. Painted or galvanized. No. 28 or 26 gauge. Roofing Plates 25 x 32 inches in size.
Fig. 110

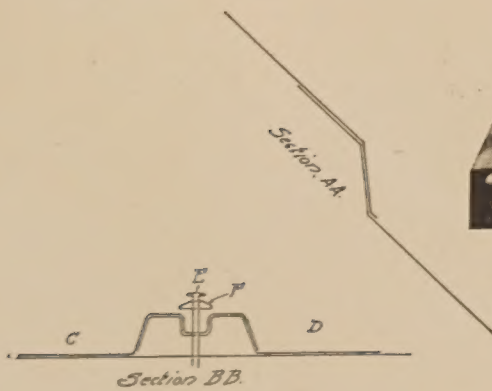
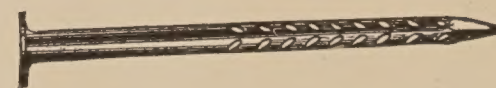


Fig. 109

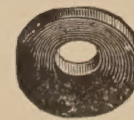
Elizabethan Tile Plates.
A—Side Seam. B—Overlapping Side Seam. C, D,
E and F shows Side Lap, Nail and Lead Washers.
Section AA shows cross lap.



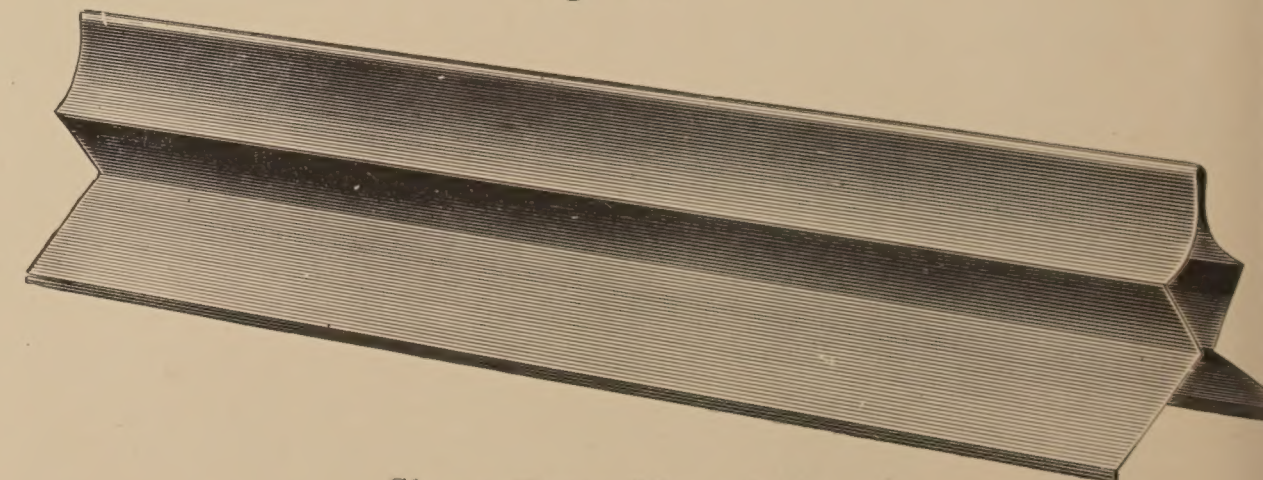
Height, 15 inches. \$3.00.



1 1/2-inch Nail.



No. 12 Washer.



Shows Fancy No. 2 Ridge Cap.
Painted Steel, per lineal foot.....14 cents.
Galvanized Steel, per lineal foot.....16 "
Ends charged as one foot. 15-inch Finial, each \$3.00.

STEEL CLAPBOARDING AND CORNER BOARDS

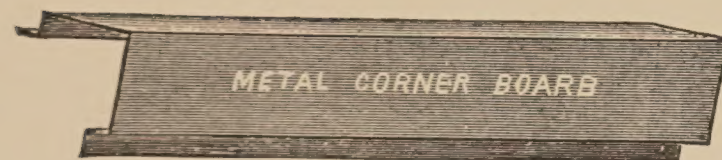
Using Convex and Concave Corner Boards. Neat in Appearance, Easily Applied.

Fig. 111



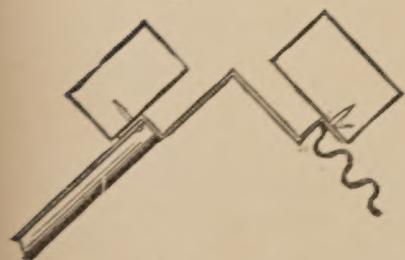
Sheet Steel Clapboard, 4 to 8 feet long, 24 inches wide.

Fig. 39



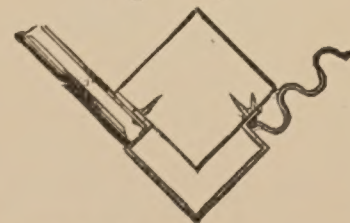
Shows manner of finishing the corner of building with Metal, made convex or concave.

Fig. 112



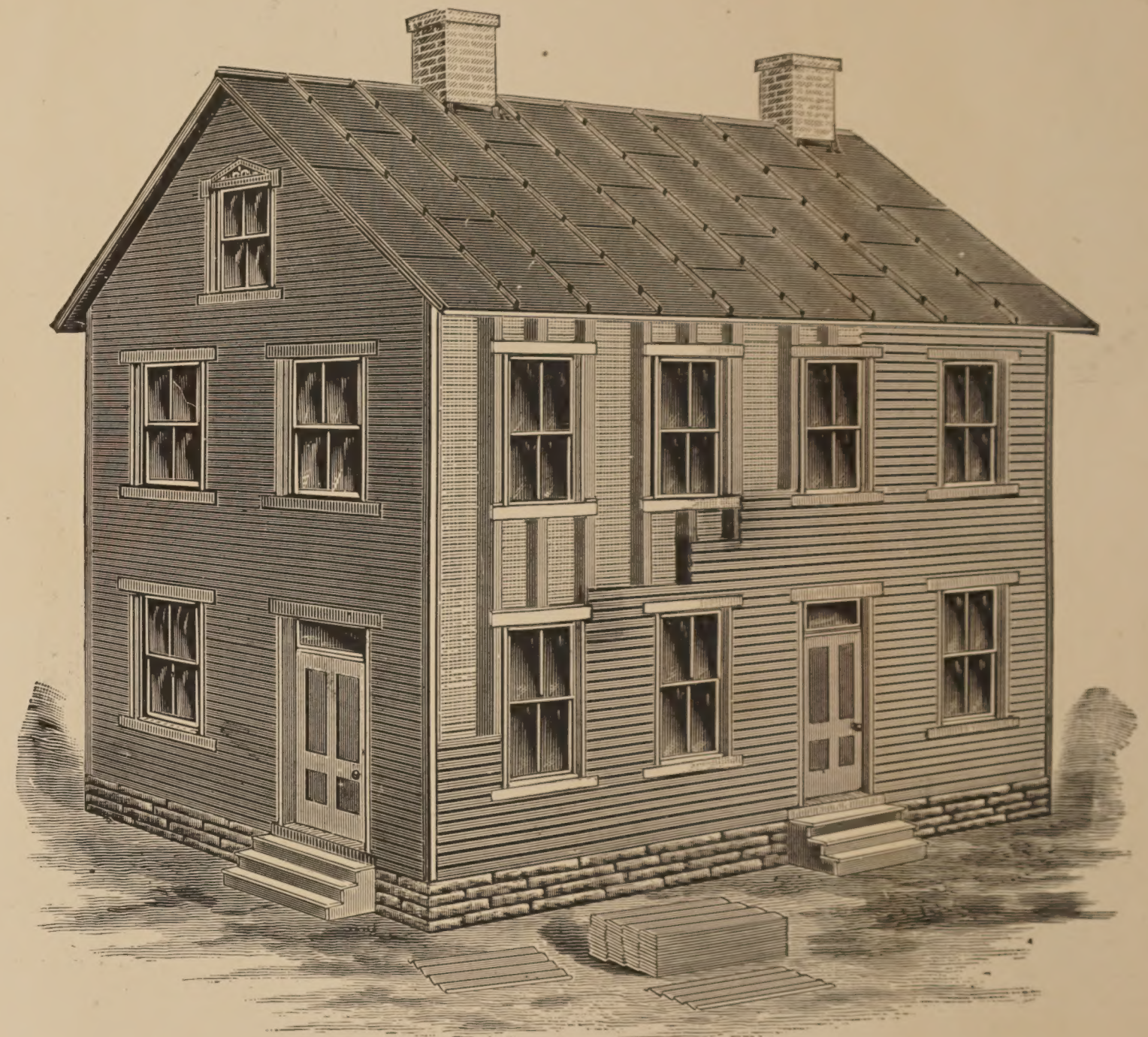
Shows application of corner board to inverted corner.

Fig. 113



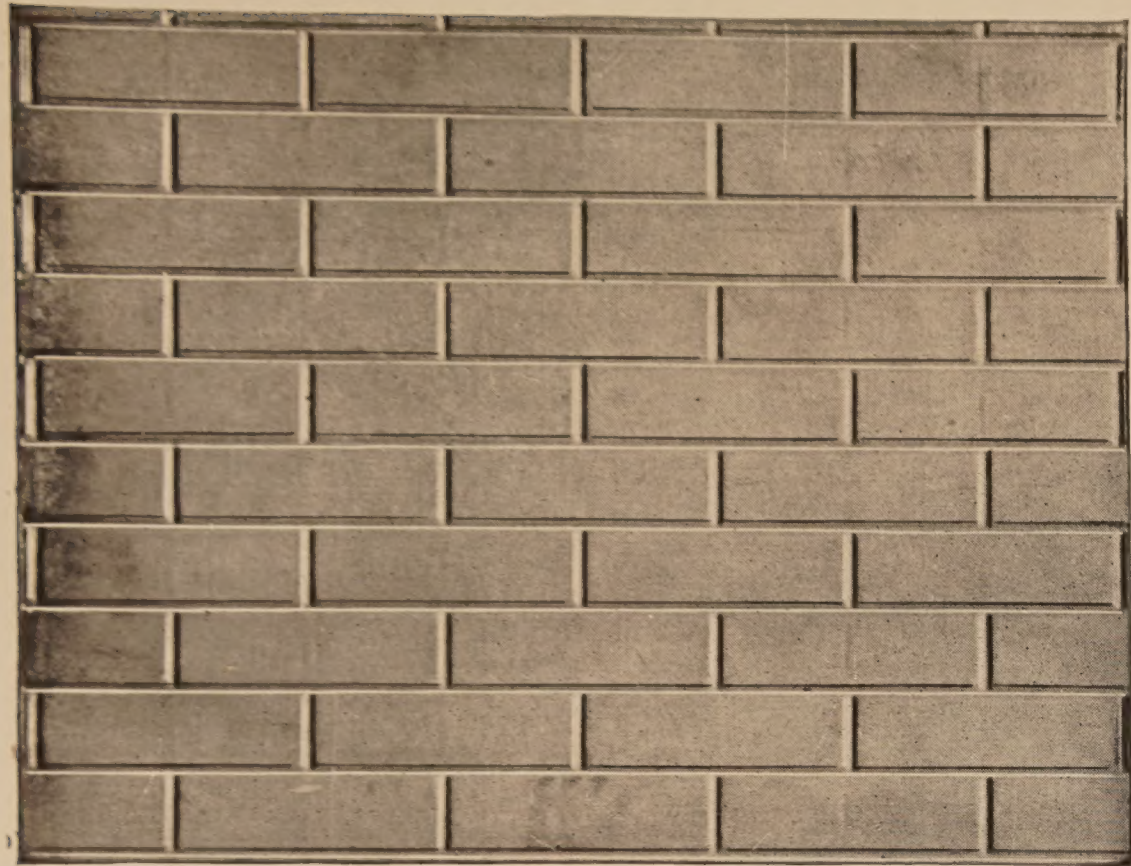
Shows application of corner board to corner of building.

Fig. 114



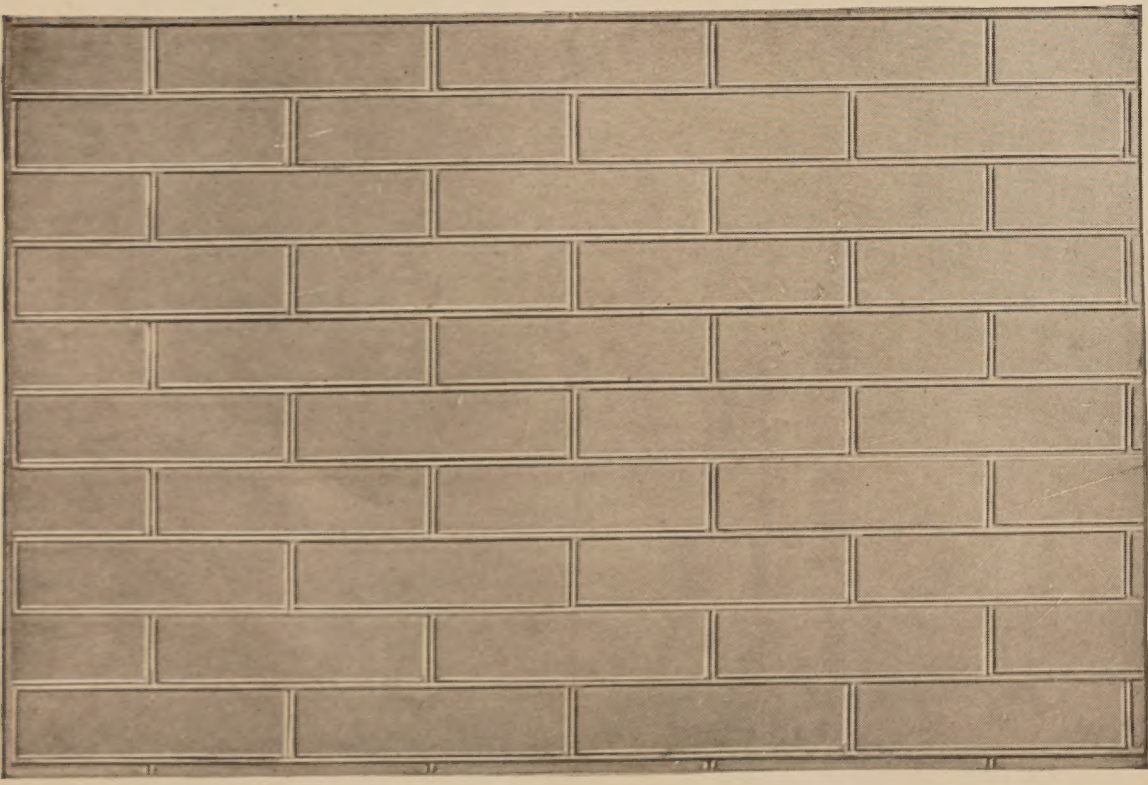
Shows a frame house covered with iron, viz.: Pressed Standing Seam Iron Roofing and Metal Clapboarding on sides. This makes a thoroughly fire, lightning and weather proof house. Neat, economical, durable; saves insurance, retains paint longer, costs less, and requires less material to repaint; lighter, simpler in application; can be applied on studding 24 inches apart, or over rough sheathing; no waste in applying. Made in lengths 96 inches and 5 panels to the sheet, $4\frac{1}{8}$ inches wide, as shown in Fig. 111.

Fig. 115



Plain Mortar Line. 30 x 96 inches.

Fig. 116

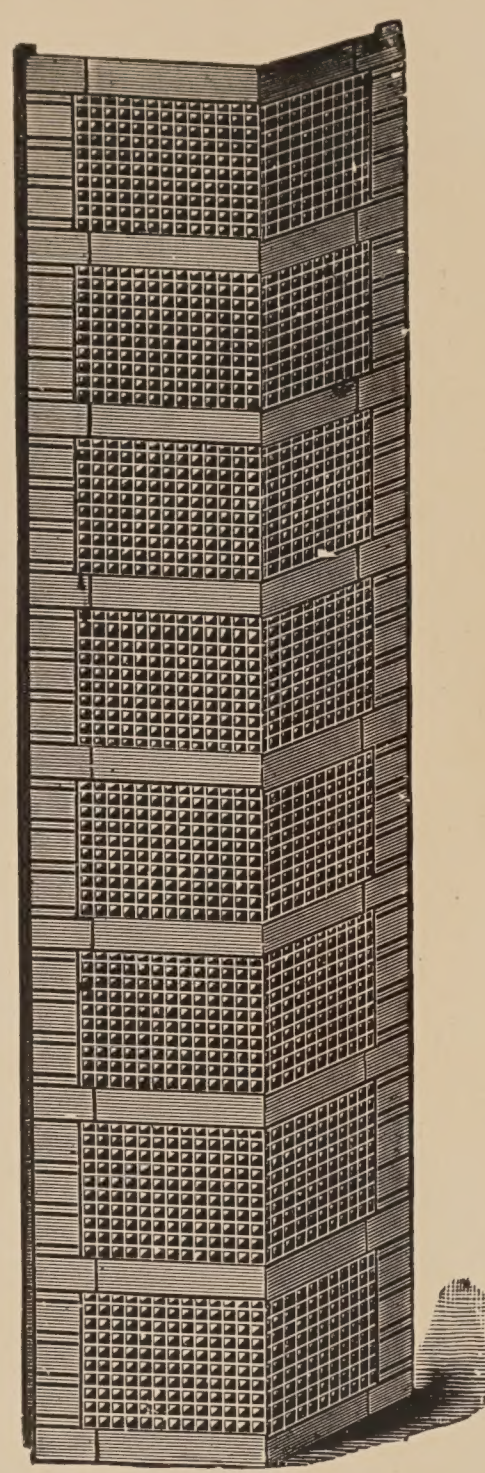


French Mortar Line, Steel Brick. 30 x 96 inches.

Fig. 117

Steel Sheet Stone Panel for corner finish, when using our Steel Brick.

We make this style of corner finish in widths of 2 to 14 inches, and they are all formed ready to apply.



Shows our Imitation Sheet Steel Stone Panel 4 to 10 feet long, 4 to 14-inch face to the weather on each face; 1-inch offset at meeting of Steel Brick edges.

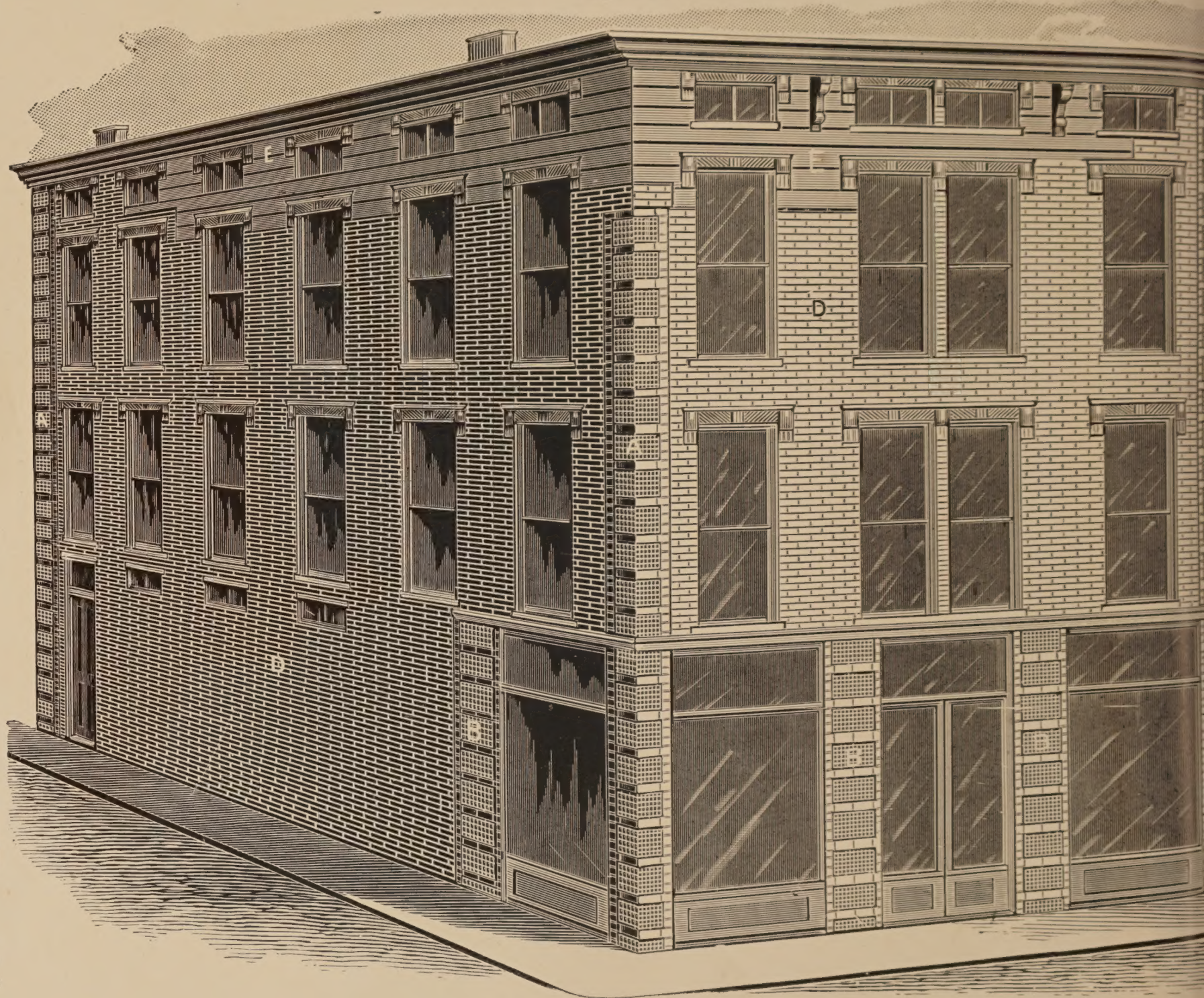
We make this style of corner finish in widths of 2 to 14 inches, and they are all formed ready to apply.

If Corner Stone Panel is used, put them on first, and back the inside of same with wood $\frac{7}{8}$ inch thick by the width of face of corner plate.

PRESSED STEEL BRICK

THE CROWING SHEET STEEL PRODUCT

Fig. 118



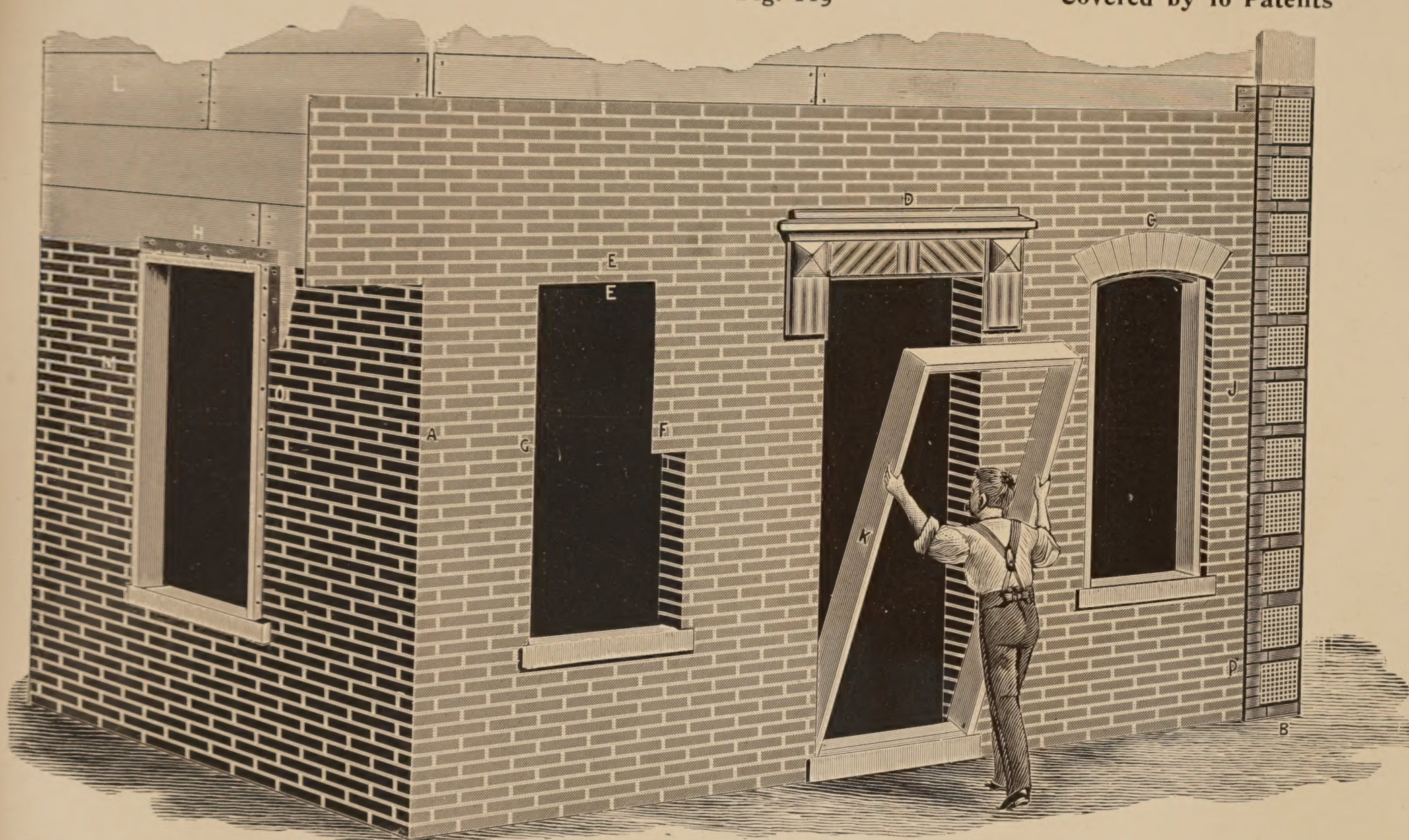
Shows frame structure covered with our Steel Bricks and trimmed with our Steel Stone Panel, Window Caps and Cornice. Neat, durable and cheap, as compared to Stone or Brick. Its exterior is fireproof and substantial.

A—Sheet Steel Stone Panel corners. B—Sheet Stone Panel Posts. D— Steel Brick. E—Sheathing.

STEEL BRICK

Fig. 119

Covered by 10 Patents

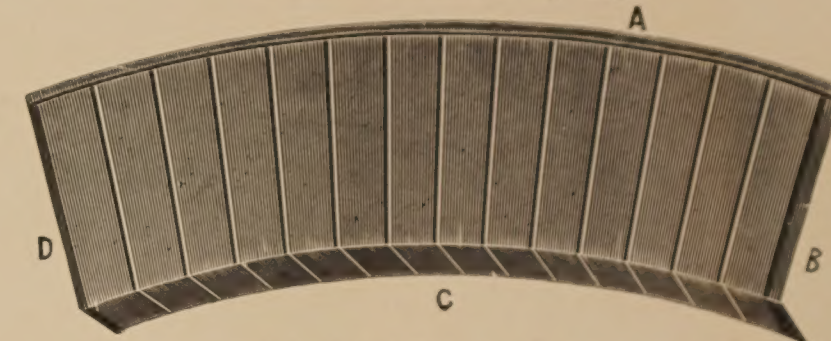


Shows process of applying our Steel Brick applications of Stone Panel Corners, Oval Window and Door Caps. How to turn a corner with the plates when no corner finish is used; also how to apply and bend around door and window opening to represent a genuine Brick structure.

A—Corner finished with the Steel Brick Plate; this is accomplished by letting the plate project over the corner 8 or 16 inches, even with perpendicular mortar bead. Nail the plate fast on the side first, then take a board 4 inches wide by $1\frac{1}{2}$ inches thick, place this against the projecting end of plate, and bend it around the corner to place on the side following, as in cut Fig. 119, above letter A, then nail fast and continue to next corner. B—Corner finished with stone panel as in Fig. 117, page 26. C—Window opening finished by letting the plate project over the opening $2\frac{1}{2}$ inches and turning over on the inside of same and nailing and placing window frame in after it is finished. D—Door with Galvanized Cap, and opening finished with plate turned, and putting in door frame. E—Upper part of window, opening finished without caps, and margin of plate as in letter F, not turned, but ready to be, as in plate below. F—All turned and nailed. G—Brick Window Cap, made as in Fig. 120, arched; we also make them straight as in Fig. 121. H—Shows frame in, and projects 1 inch beyond sheathing. When like this, we recommend using angle stock $\frac{3}{4}$ inch by 1 inch, to nail on first, then butt the plates against the flange lip and nail. K—Putting in door frame after steel plates are applied. This illustration, if carefully studied, will convey the practical methods of applying our steel plate and attachments. No original stone or brick can equal these products for beauty and uniformity of finish, if the proper care is taken when putting on the different styles and designs we make.

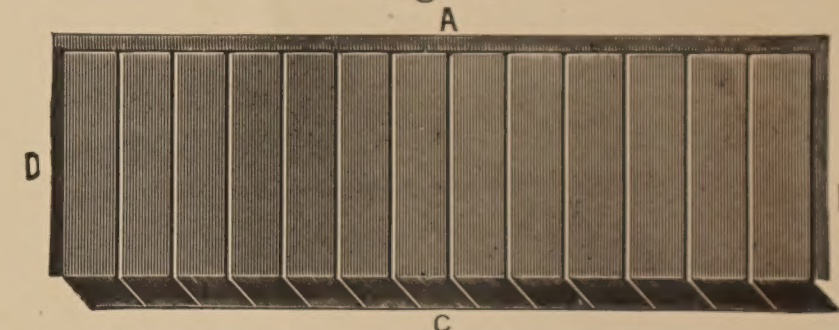
Fig. 120

Patented March 24, 1891.



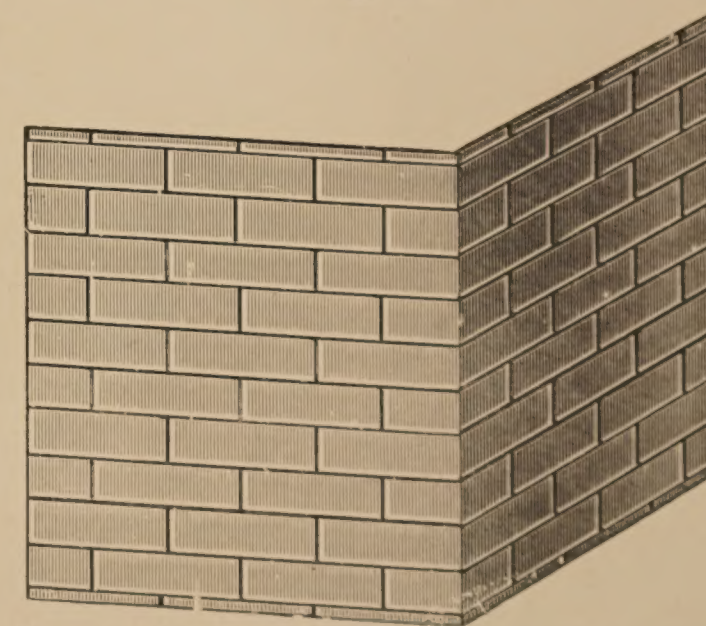
Shows arch brick window or door cap. Prices based on 48 inches in length, or under; all over 48 inches in length charged for in proportion. Galvanized Steel, per cap, \$4.25.

Fig. 121



Shows straight brick window or door cap. Galvanized Steel, per cap, \$3.75.

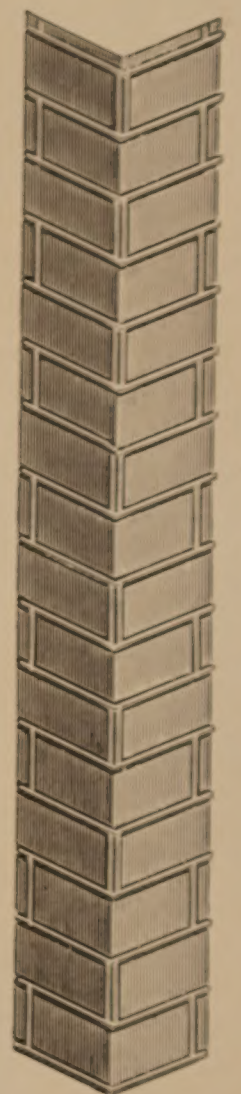
Fig. 122



Shows a sheet bent at right angles for fitting corners where the Stone Panel is not used.

This is done while applying. Let the sheet project over corner 8 or 12 inches; have the Horizontal Mortar Line even with corner of building. Nail the sheet to sheathing; then bend the projecting part carefully around corner and nail it.

Fig. 123



Shows corner finish made from the brick sheet, 4 inches or $\frac{1}{2}$ of a brick each side.

List of Tools necessary to use in applying any of the Manufactured Goods illustrated and explained in this Catalogue, to insure a perfect and durable job



Fig. 124
\$2.25. To be used on roof when painting last coat.
Made of Galvanized Iron.

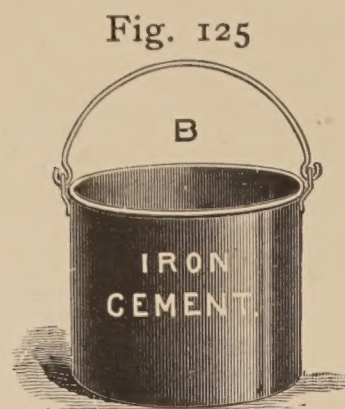


Fig. 125
\$1.75. To hold our New Cement
Made of Galvanized Iron.

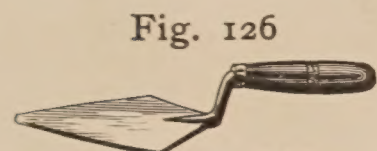


Fig. 126
90 cts. Used for Preparing Flashing.

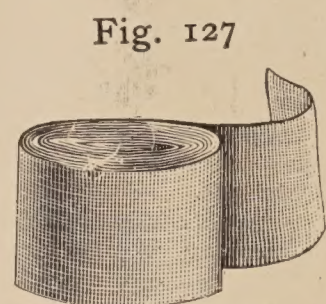


Fig. 127
3 to 8 cts. per Roll. Flashing
Fiber Roll, 1 to 4 in. wide, 12 ft. long.

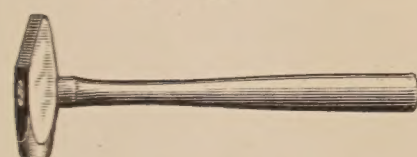


Fig. 139
50c. Used with all Metal Goods.

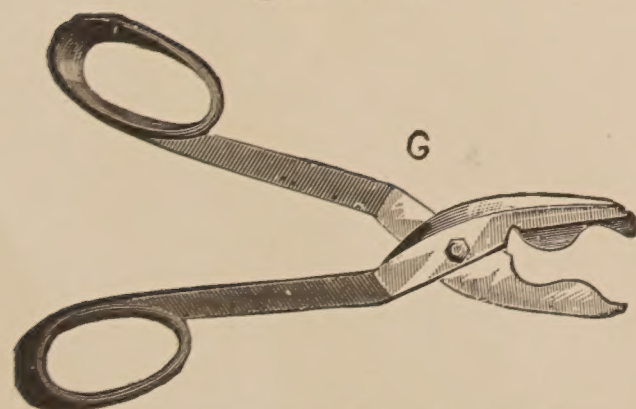


Fig. 130
Patented March 5, 1885
December 28, 1886
August 14, 1888
2½-IN. CORRUGATED SNIPS
Also 1¼ Corrugated Snips. \$8.00 each.

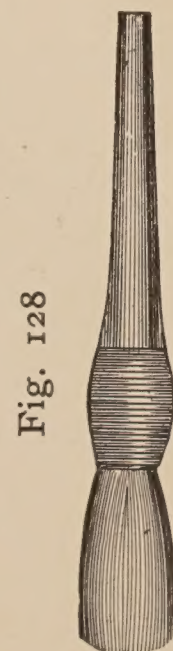


Fig. 128
Sash Tool for Cutting in. 40 cts.

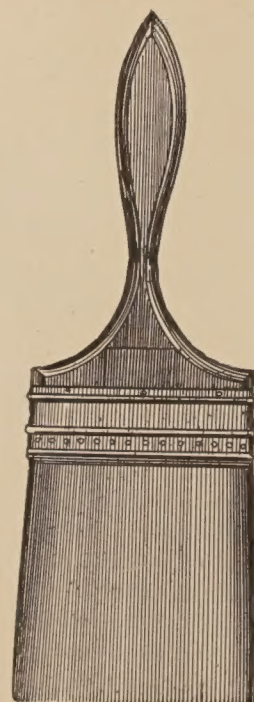


Fig. 129
Flat 5-inch Brush. \$2.00.

Tongs Turning and Squeezing.

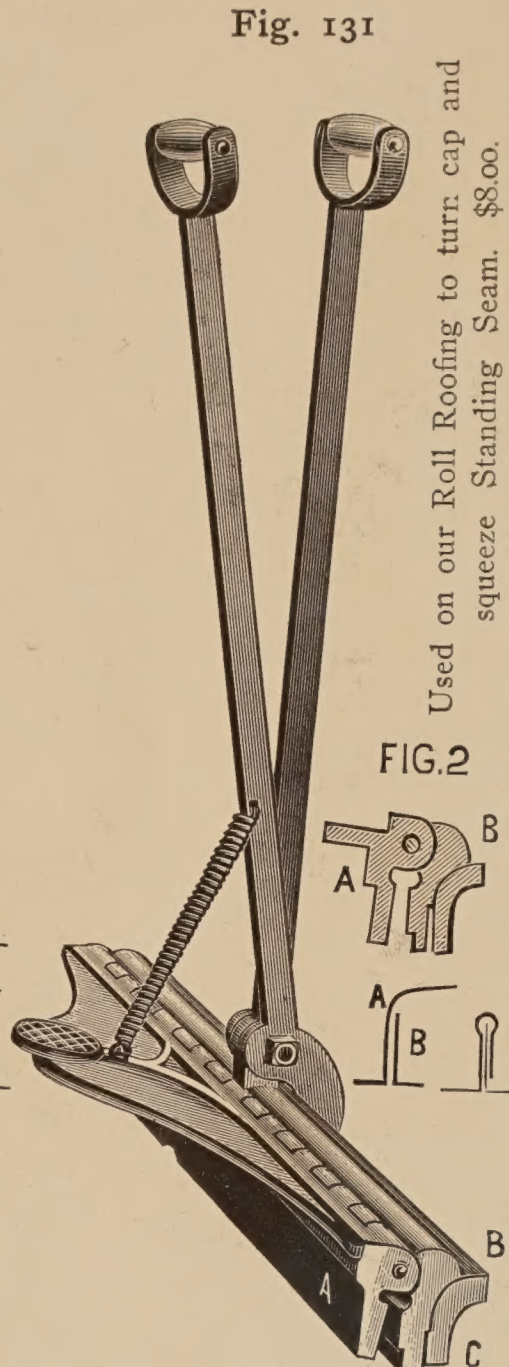


Fig. 131
Used on our Roll Roofing to turn cap and squeeze Standing Seam. \$8.00.

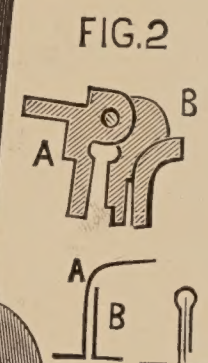


FIG. 2

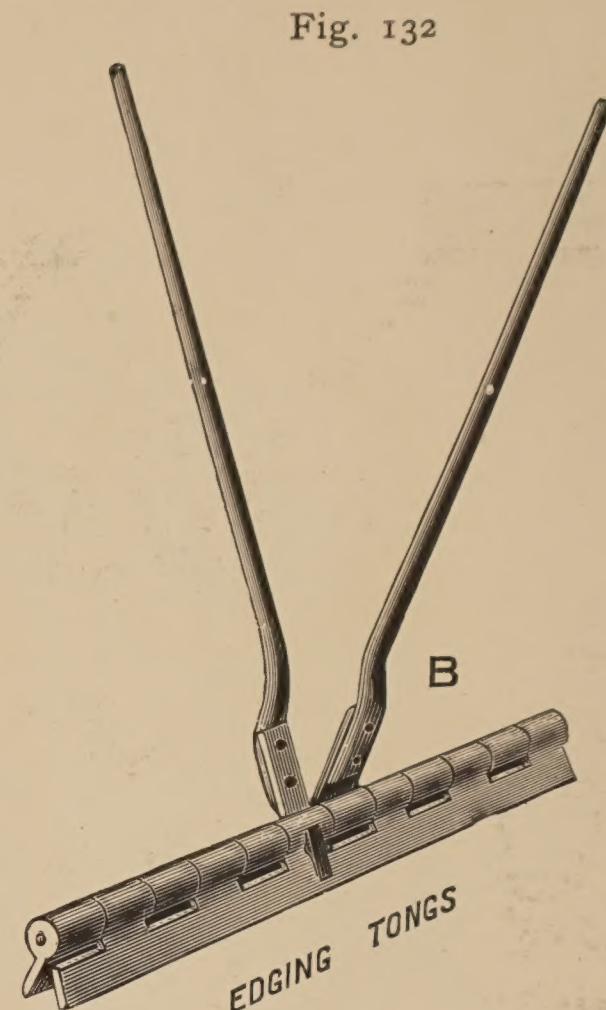


Fig. 132
Two sizes, 1 inch and 1½ inches.
\$2.50 per pair. Used with Roll Cap Roofing and Roll Roofing.

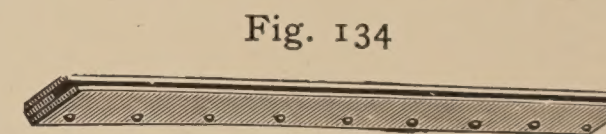


Fig. 134
E-Jointer
Used on Pressed Standing Seam Roofing. 75c.
Crown Roll and extra Cleat V Crimped Roofing.

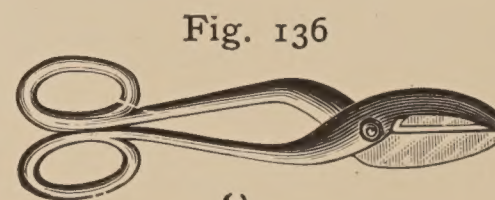


Fig. 136
STRAIGHT SNIPS
\$1.75. Used with all the Articles.



Fig. 138
MALLET
25c. Used with all our Roofing.



Fig. 133
SQUEEZING TONGS
\$2.50. Used with Roll Cap or Pressed Standing Seam Roofing.

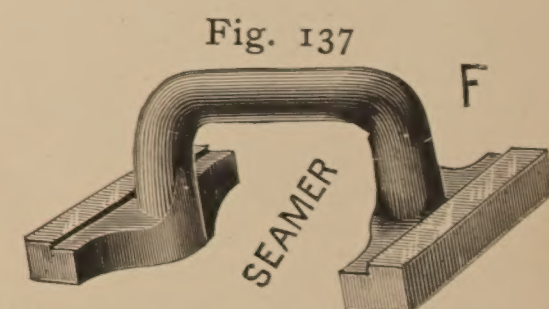


Fig. 137
SEAMER
\$1.25. Used with Roll Cap, Pressed Standing Seam and Extension Cleat.

OBELISK AND ITS VIRTUES. DIRECTIONS

Fig. 140



Strictly Pure Pigments and Linseed Oil

Best Roofing Paint in the Market. The only durable and non-oxidizing Cement and Paint ever put on sale. It has stood the test of all elements for twenty years, in all parts of the country.

DIRECTIONS FOR APPLYING METALLIC PAINT ON METAL AND WOOD

First clean off the roof, removing all scaly paint or other matter, so that the surface will be firm and clean. Look carefully for all holes, broken seams, etc. If none, proceed to paint, rubbing the paint out well as you apply it. If any breaks in joints or seams, mark them with a scratch awl. Mark all holes made by rust or nails; then coat each place with the paint. Take good cotton unbleached muslin for our Patching Rolls; tear in strips large enough to cover one inch each side of the break; take a trowel and spread the cloth fibre without cement; then lay it over the broken place, patting it down firm and smooth, and paint lightly over it. Put a small lump of cement into all rust and nail holes. Treat leaks around chimneys, flashings, in skylights or counter-flashings same as broken seams; then paint the whole surface. Keep the paint stirred and rub it out well. No drier is necessary. If the paint is too thick, add one quart of boiled linseed oil to the gallon. This paint can also be used for any kind of metal or wood which is exposed to the weather. When used on wood, add one-half gallon raw linseed oil to the gallon of paint. It is the only paint in the market that can be relied on. Our cement can also be purchased from our regular agent at a small cost. Always stir the paint before using.

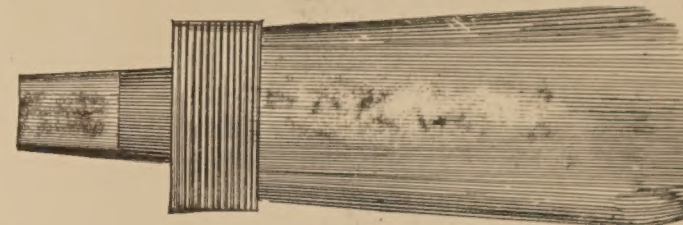


Fig. 141



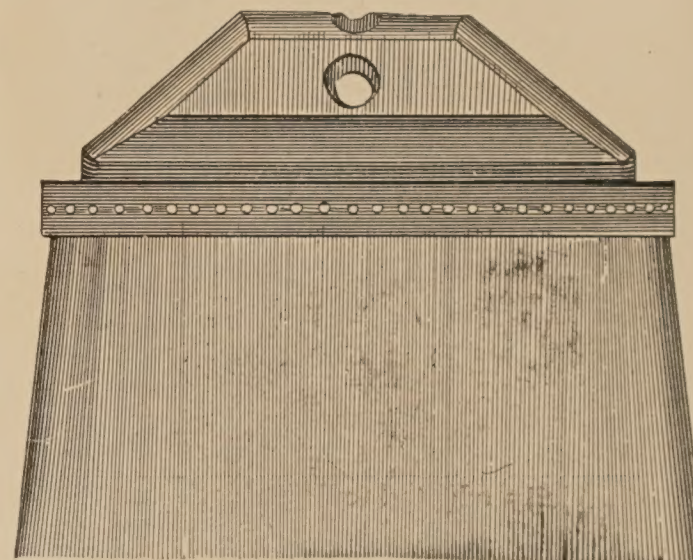
Sash tool for cutting in. 40c.

Fig. 142



Round 6-o Brush. \$2.00.

Fig. 143



Shows 9-inch, Flat Long Handle Brush. Price, \$2.50.

Flat 5-inch Brush. \$2.00.

Fig. 126



90c. Trowel used for Preparing Flashing.



Shows Cement and Paint Buckets, 1 to 10 gallons, cement 5 to 300 pounds.

Fig. 129

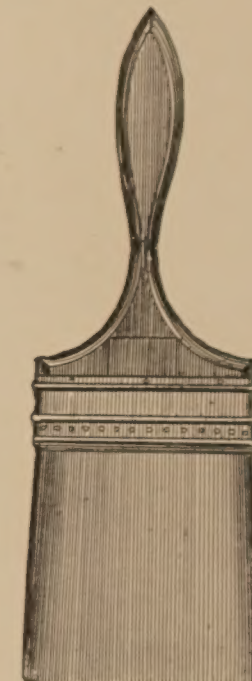


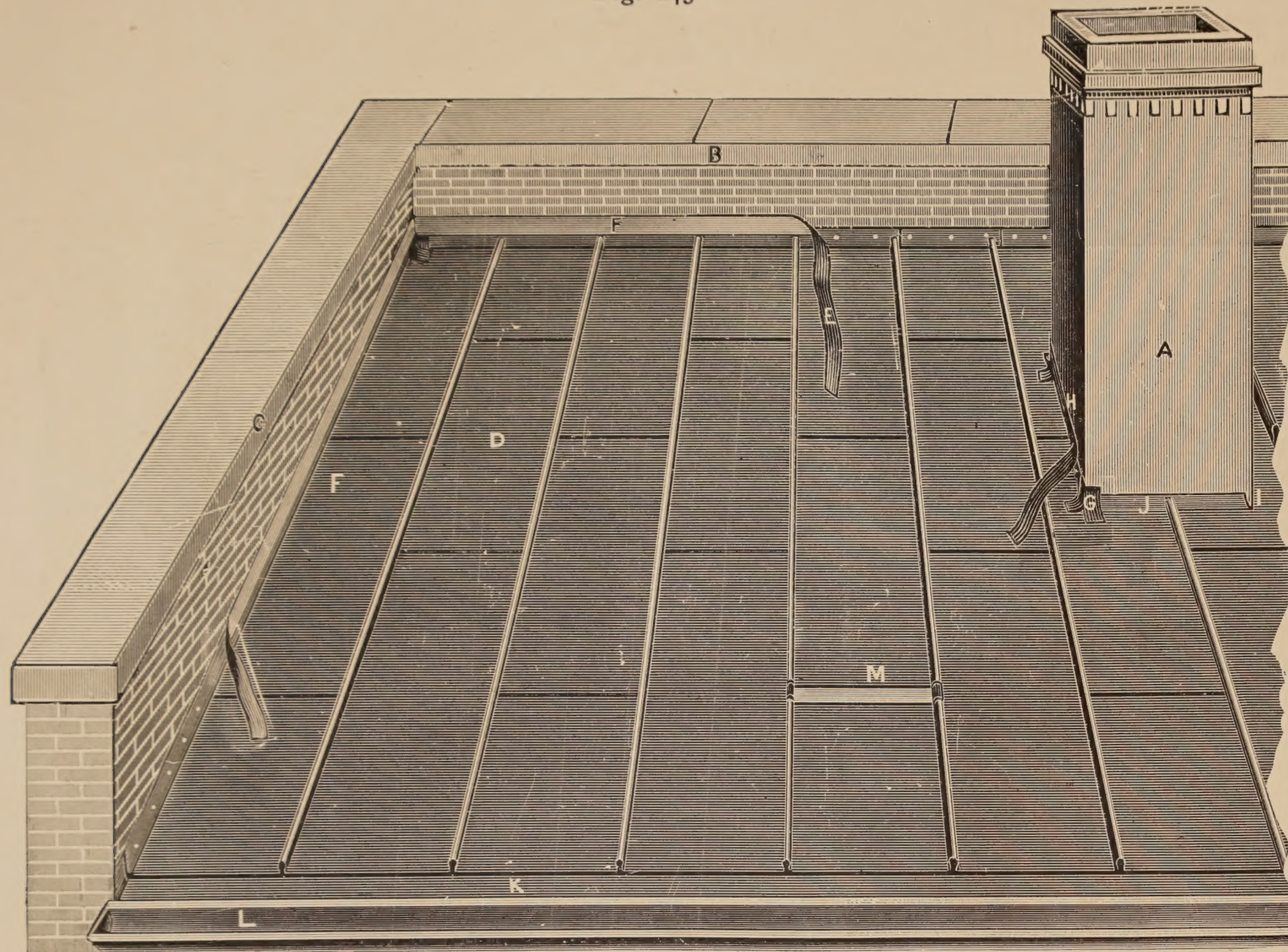
Fig. 144



Shows 3-Knot Brush. Price, \$3.50.

In applying this cement, the following directions must be carefully observed: First, paint all holes or breaks with our Sagendorph Obelisk Paint, and after that is done, apply the cement as follows: For small nail and rust holes, put a small lump of cement into the hole so as to cover and fill it, allowing the cement to stand a little above the surface. For broken seams, large holes, fixing chimneys, skylights or counter-flashings, the following must be carried out: First, take good cotton unbleached muslin, tear it in strips large enough to cover one inch each side of the break (our Fibre Rolls are prepared); take a trowel and spread the cloth fibre with the cement, laying the same over the break (painting or priming it with paint first), patting it down firm and smooth with your hands, and paint lightly over it. Be sure and allow enough cloth to cover each side of the break by one inch. After all the patching is done, paint the roof with our Sagendorph Obelisk Paint. If the roof has many leaks and requires a great deal of patching, it is best to do the patching and let it stand a day or so before coating the entire surface. This gives the patches a chance to set. If our directions are carried out, your roof will remain free from leaks for years. This cement, in connection with the cotton fibre patches, make perfect contact of metal to slate, brick, stone or mortar. It readily adheres to any of the above named, effectually excluding water, and will prevent or stop leaks in shingles, slate, tin and iron roofs. The best counter-flashing material for roofers and tanners to use. We furnish Patching Fibre in rolls, 12 feet long by 1, 2 and 3 inches wide, ready to spread with cement and apply.

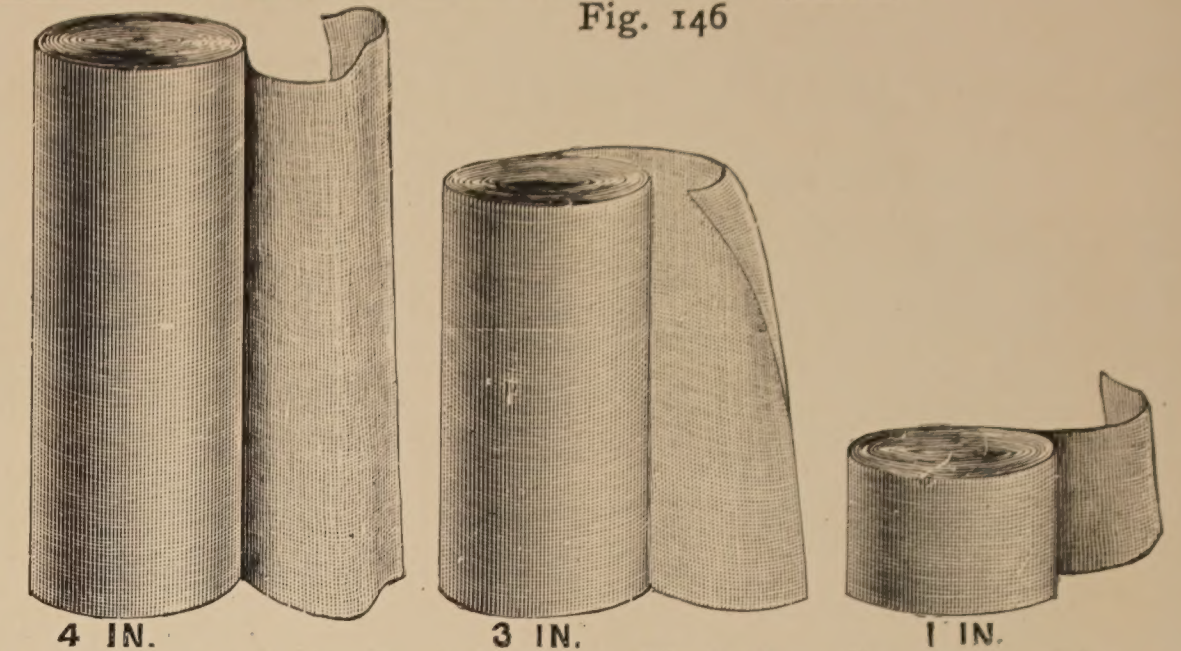
Fig. 145



Shows Sagendorph process applied to new work, especially adapted to finishing iron or steel roofs. It applies equally as well as to tin, zinc, copper, slate or shingles (tin or wood).

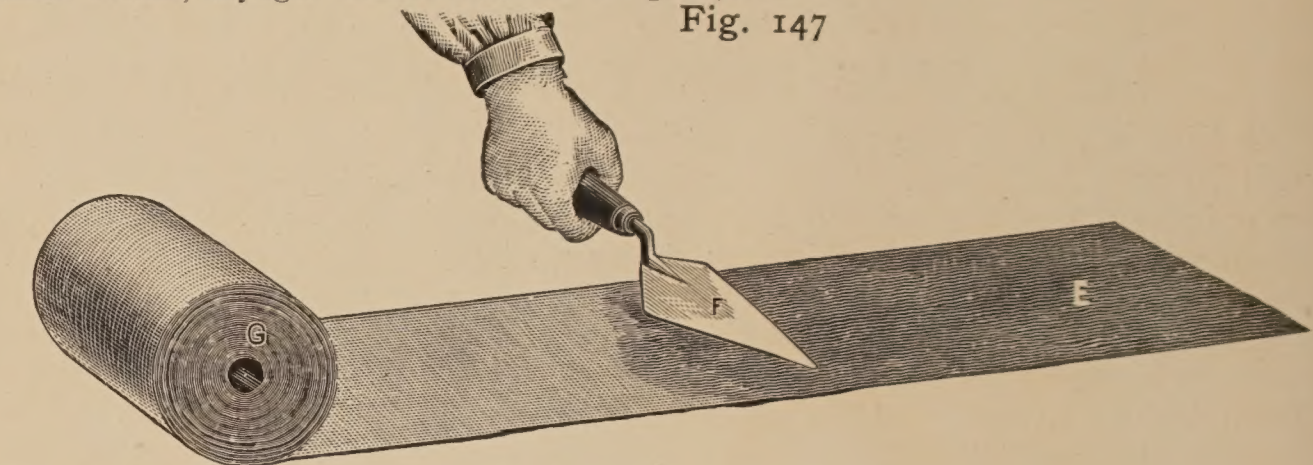
A—Location of chimney. B and C—Stone flagging covering top of parapet walls. D—Roofing laid ready to flash and paint. E and F—Fibre flashing spread with Obelisk Iron Cement, and partly applied to the iron turn up and brick wall. G—Mode of securing cut corners before counter-flashing. H—Counter-flashing applied upon corner finished, lower corners ready. I—Corner before treating, flashing turned 3 inches and nailed, then apply corner fibre as in G, after applying the counter-flashing as in H and F. J—Iron flange turned 3 inches. K—Roofing sheets hooked into box gutter lining. L—Box gutter lined with iron. M—Manner of finishing an imperfect cross joint. Before applying the fibre, prime the place to be treated with Obelisk Paint, 2 inches on the brick or wood, and 2 inches on the iron; then spread the fibre smoothly with a trowel (spread it thin), as in Fig. 147. For corners, prepare the fibre as in Fig. 148, after spreading the cement on the fibre, apply then as in Fig. 149; pat them smooth, allowing no air to remain between the patch and what it is applied to. Work out the edges into the cement; then paint over it lightly, filling the outside fibre. Always apply the corner pieces first, then the last flashing as in letter F, Fig. 145. For nails and small breaks and rust holes, tear fibre patch long or square to cover the breaks one inch each way.

Fig. 146



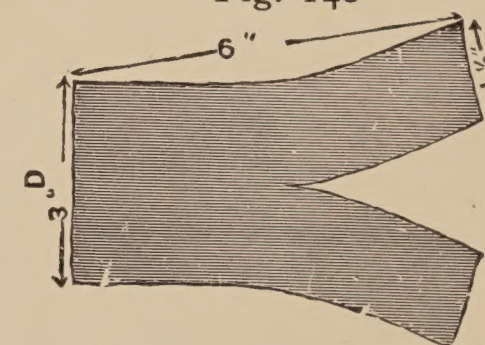
Shows Fibre patching rolls, made from unbleached muslin, torn in strips, 4, 3 and 1 inches wide, 12 feet long, and put into small rolls, ready for use. 3-inch is used in counter-flashing around chimneys, skylight frames at base, and parapet walls, or adjoining buildings. 2-inch is used for repairing cross joint seams and standing ribs. 1-inch for small breaks, skylight frames between the glass, etc.

Fig. 147



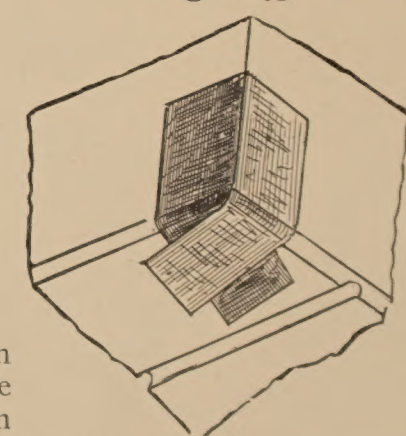
Shows Fibre roll in process of spreading with Obelisk Iron Cement before applying. E—Cement spread on fibre before using. F—Trowel used in spreading and smoothing the cement. G—Roll Fibre material.

Fig. 148



Shows corner patch or under-flashing, used on all corners on roof, is made from a 3-inch wide Fibre, 6 inches long, and at one end it is torn or slit 2 inches deep. Ravel out all the raw edges before spreading on the Cement.

Fig. 149



D—Shows shape of corner patch in letter G and upper corner of Fig. 145; also shows how to apply this corner patch on an inverted corner. Letter G is open at the base of fibre as shown. When applied to inverted corner, the base ends are lapped over one another, as shown in upper corner of roof, Fig. 145. Always pat them smooth and repaint them as soon as applied. After the roofing is all treated, then proceed to paint, moving the brush lightly over the fibre flashing and patching. If convenient, and the job is large, it is best to do all the flashing and patching, and let it stand one or two days before painting the entire roof.

Fig. 150



Shows a concave corner patch or flashing for cut corners.

This process and material will do the work better, quicker, and more effectually than acid and solder—no danger of deterioration or loosening

PATENT METAL ROCK-FACED PRODUCTS

Rock-Faced Sheets, Pilasters, Belt Line and Corner Finish

Fig. 151

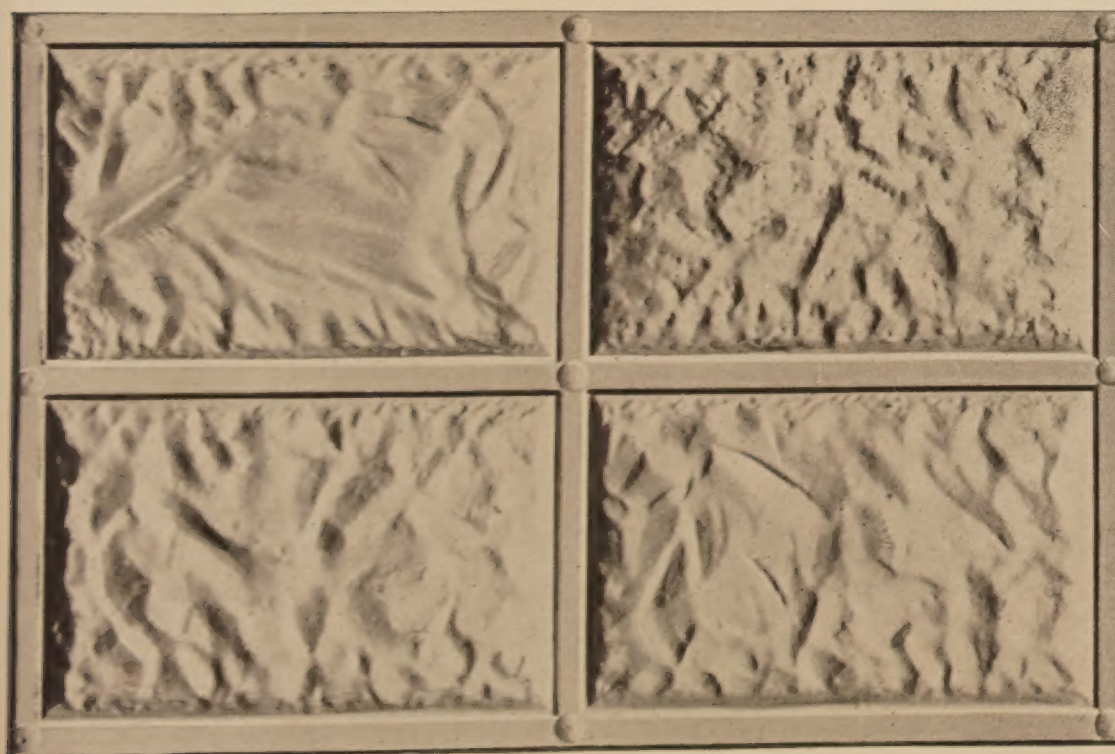


Size of Sheet, 28 x 48 inches, or 9 1-3 square feet to the sheet; 10 3/4 sheets to 100 square feet.

Body Plates for Siding.

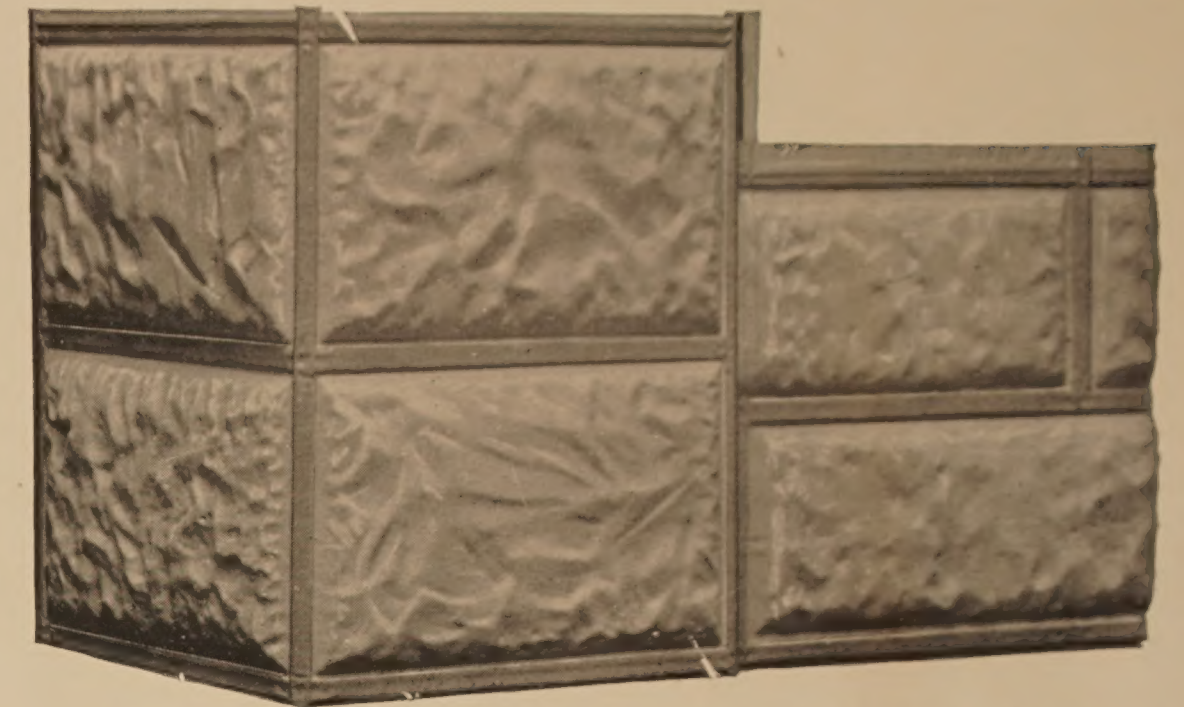
Size of Stock Sheet, 28 x 48 inches. Size of Stone, 24 x 7 inches.

Fig. 152



Size of Sheet, 18 x 28 inches, or 3 1/2 square feet to the sheet; 28 3/4 sheets to the 100 square feet. Corner Plates or Belt Line. See Fig. 153.

Fig. 153



When used as Corner Finish always back inside with 3/4-inch boards with of Stone. Block on each side. Shows 152 bent at right angle in Centre Mortar Line for Corner Cover and Plate. Fig. 151 for Main Covering on body of building.

Fig. 154



Shows Fig. 152 prepared for Corner Finish and to be used as in Fig. 153.

Always state the amount of lineal feet required for corner, and we will prepare the edges and charge for time to do this work.

Fig. 155



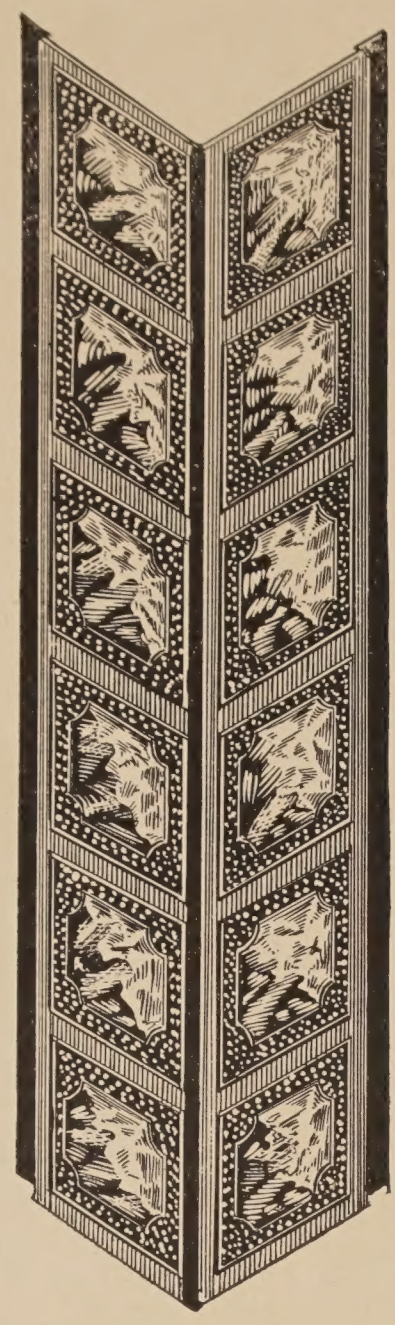
Rock-faced Dado, used with Rock-faced Wainscoting.
Size, 11 x 120 inches long.

Fig. 157



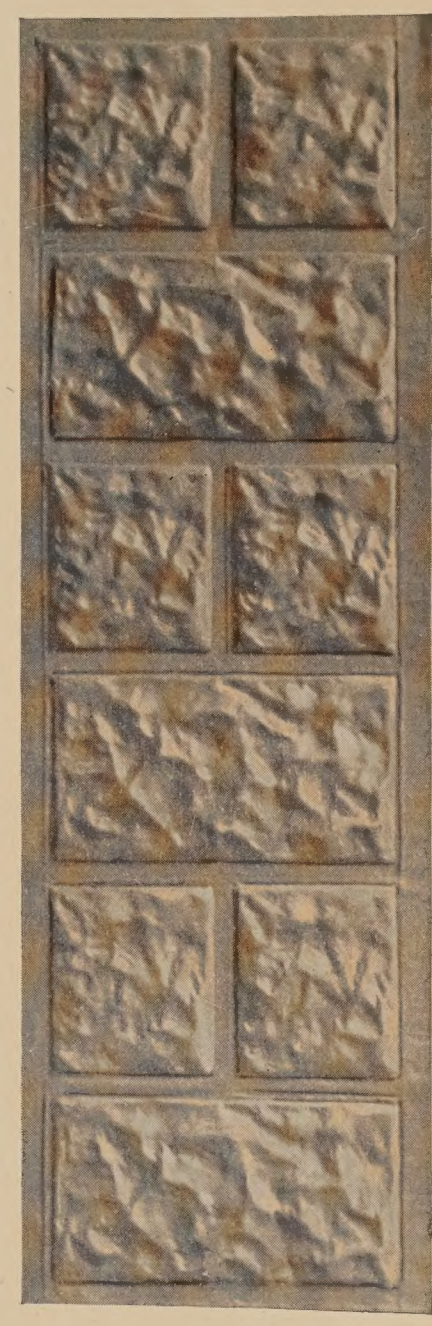
Length, 6 feet. 12-inch face rock stone.

Fig. 156



Length, 6 inches. 12-inch face rock stone.

Fig. 158



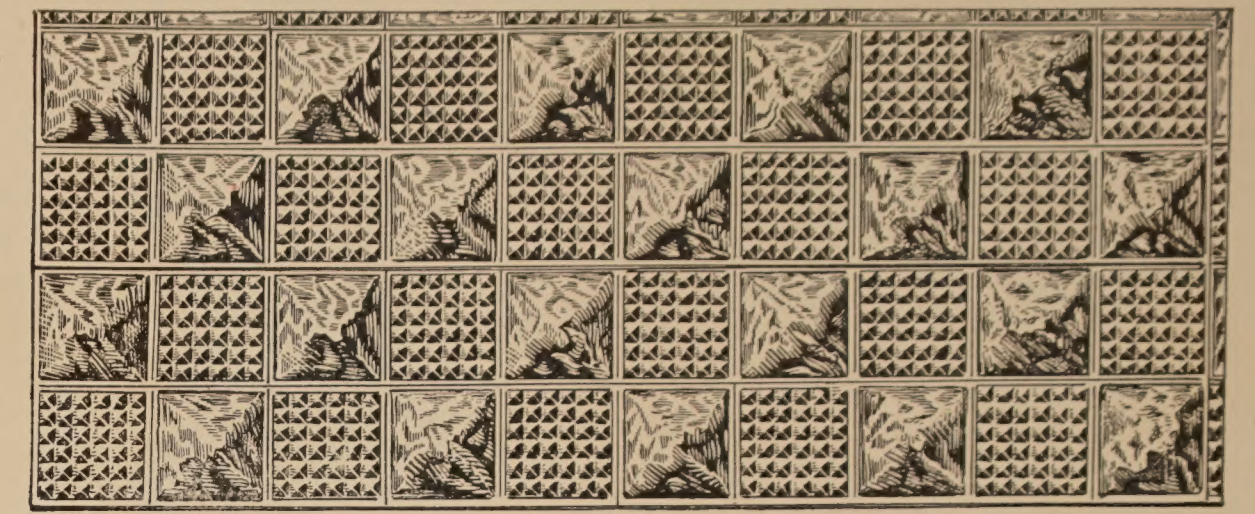
Width 12 inches; in length,
1 to 10 feet.
Pilaster or Corner Finish.
Blocks, 13 x 7 inches. Half
Blocks, 6½ x 7 inches.

Fig. 335



Rock-faced Stone. Size of Sheet, 28 x 96 inches. Stone Blocks, 7 x 12 inches.

ITALIAN RENAISSANCE BLOCKS
Fig. 159



Border or Belt Line Outside Building Finish; Wainscoting for Interior. Size, 24 x 96 inches.
Fig. 160

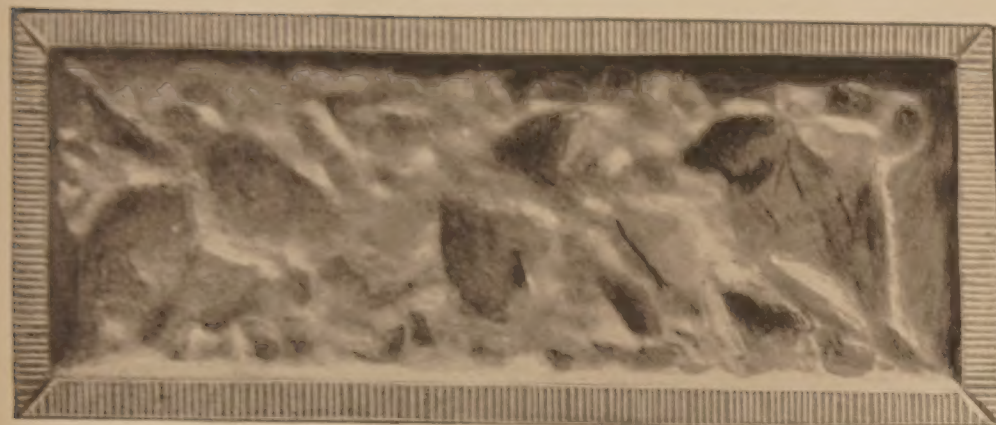


Belt Line or Border. Size, 24x96 inches. Blocks, 6 inches square.
ROCK-FACED BRICK
Fig. 161



Rock-Faced Brick. Size of Sheets, 26 x 96 inches. Bricks, 2 x 8 inches.

Fig. 162



Whole plate. Size of rock, 26 x 10 inches. Lap joint.
Fig. 163



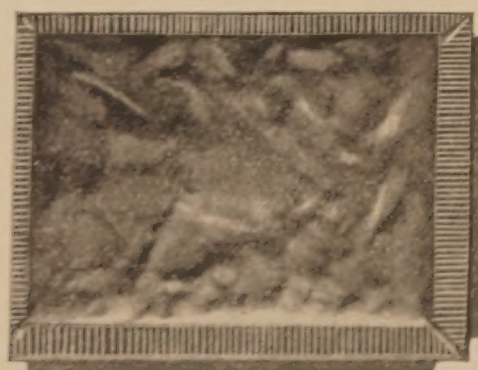
Half plate. Lap joint. Size, 10x13 inches.
Fig. 164 Fig. 165



Whole plate. Lap joint. Size, 16 x 10 inches.
Fig. 166



Half plate. Size, 10 x 8 inches.



Duplicate of Fig. 163, showing Slip Lock Joint. Can be applied to Rock-faced Plates, Figs, 162 to 165.

ROCK-FACED STEEL STONE

Fig. 167



Shows our Rock-Faced Steel Products, as per Fig. 162, in the body; 158, belt line and corner finish single sheets formed for this style of work, page 31, Fig. 153.

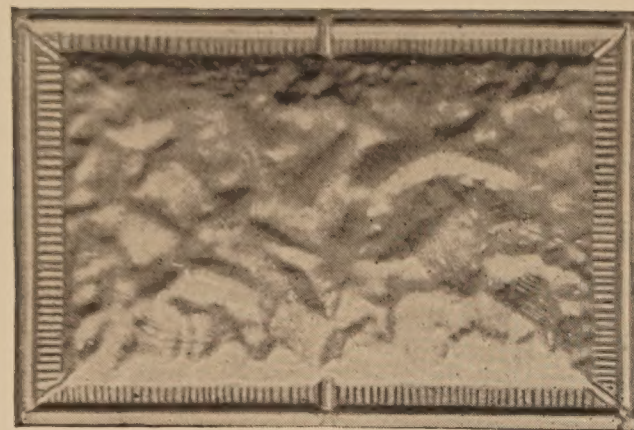
ROCK-FACED BLOCKS

Fig. 168



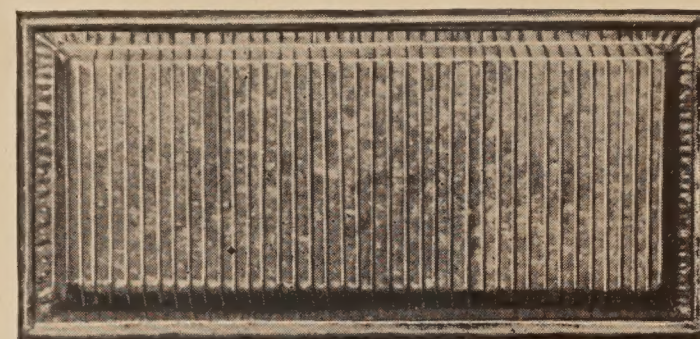
Size, 9 x 6¾ inches centre.

Fig. 169



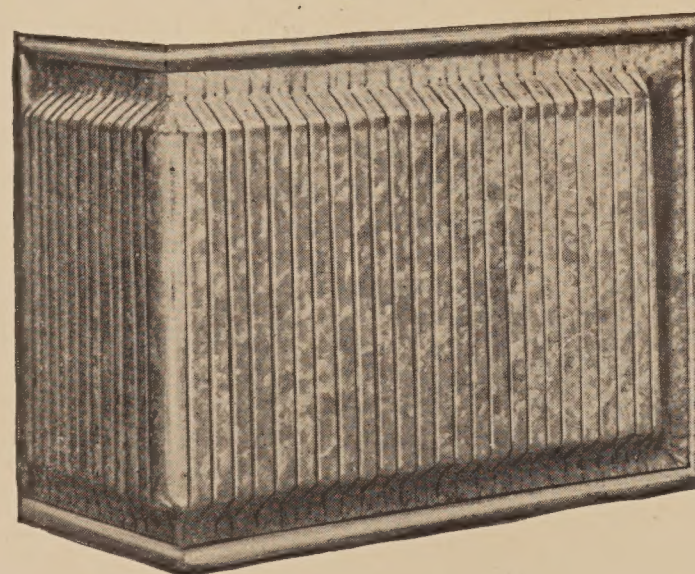
Rock-faced Plate with Bead Lap.
Size, 13½ x 9 inches centre.

Fig. 171



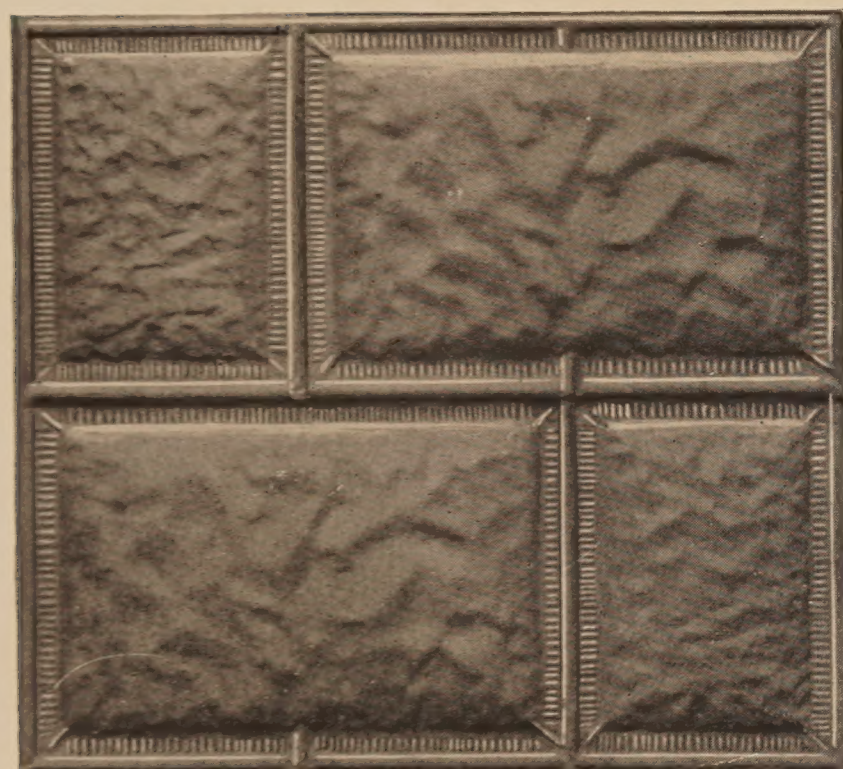
Corner Quoin Block. Size, 20¼ x 6¾ inches.

Fig. 172



Size, 6¾ x 13½ inches. Shows Quoin Block bent for Corner Quoins, to alternate as in Fig. 173, page 34. In forming these blocks for quoins, snip at distance from one end 6¾ inches top and bottom of block; then bend to angle and solder the cut places.

Fig. 170



Shows Break Joints with our special single Blocks as in Figs. 164 and 165, Page 33.



These illustrations show our Special Rock-faced Steel Single Blocks and Corner Quoins. See Figs. 168, 169, 171 and 172

ROCK-FACED STEEL AND BELT MOULDINGS—Keystone Window Caps

Fig. 174



Shows Front of Building Covered with our Rock-Faced Steel Plates. Body plates, Fig. 151 page 31. Corner Plate, Fig. 152, page 31, also Belt Line below windows. Corner Plates made with offset as in Fig. 154, page 31, and applied as in Fig. 153, page 31. Belt Moulding Styles of Figs. 175 and 176. Caps made of Blocks from Fig. 152, page 31, with extra Keystone, size governed by width of windows or doors. Extra charge for time in making these Blocks. Cornice and Corner Blocks vary in price according to size and girth (see pages 48 to 51).

Fig. 175

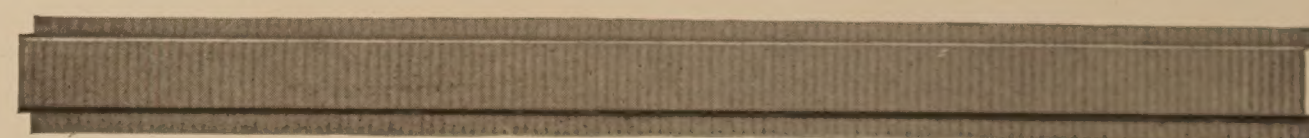


Mouldings for Belt used top and bottom of Rock-Faced Plate, Fig. 152 as in Fig. 174.



Size $2\frac{1}{2}$ x $\frac{5}{8}$ in.

Fig. 176

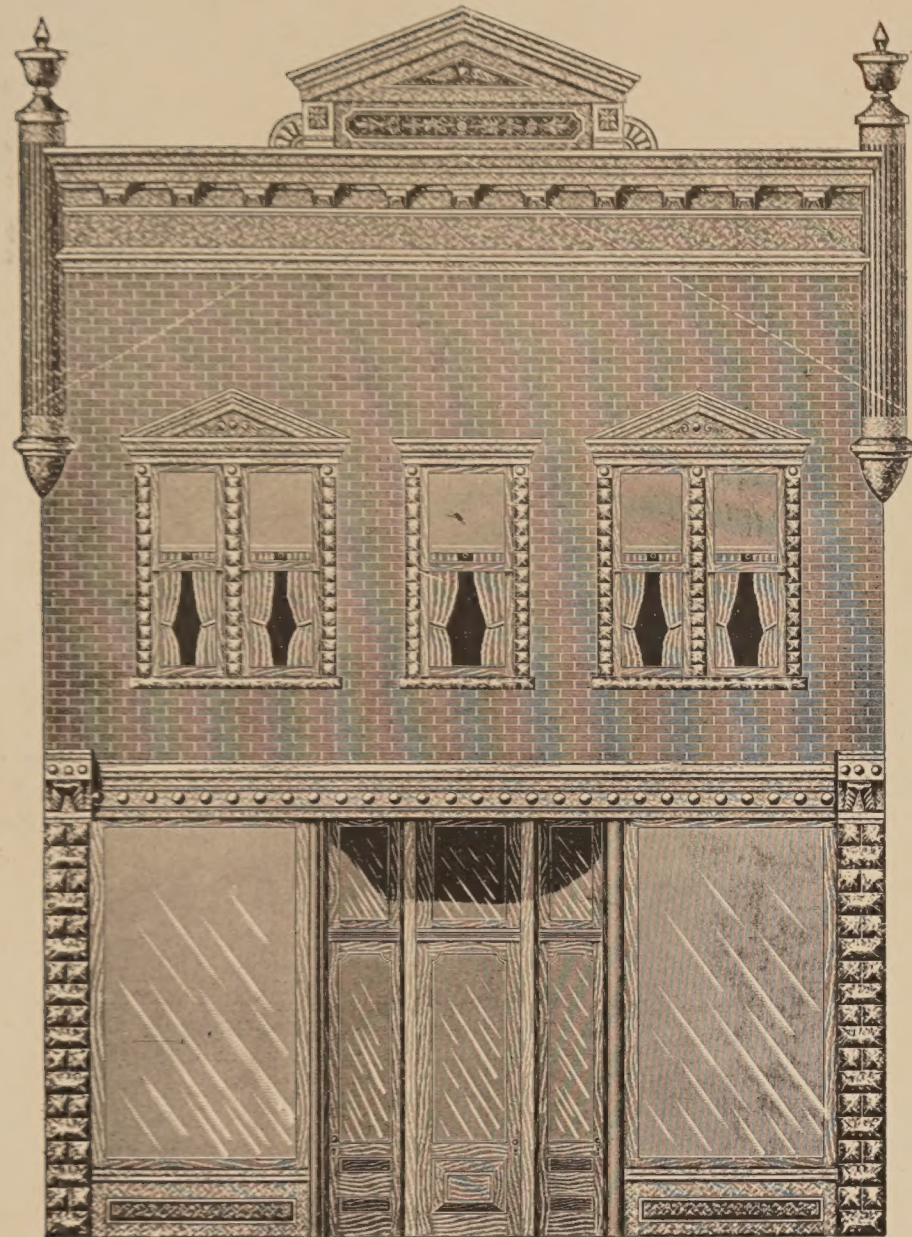


Belt Moulding as in Fig. 174, in Belt Line of Rock-Faced Plate under windows.



Size $1\frac{1}{2}$ x $\frac{1}{2}$ in.

Fig. 177



FRONT ELEVATION

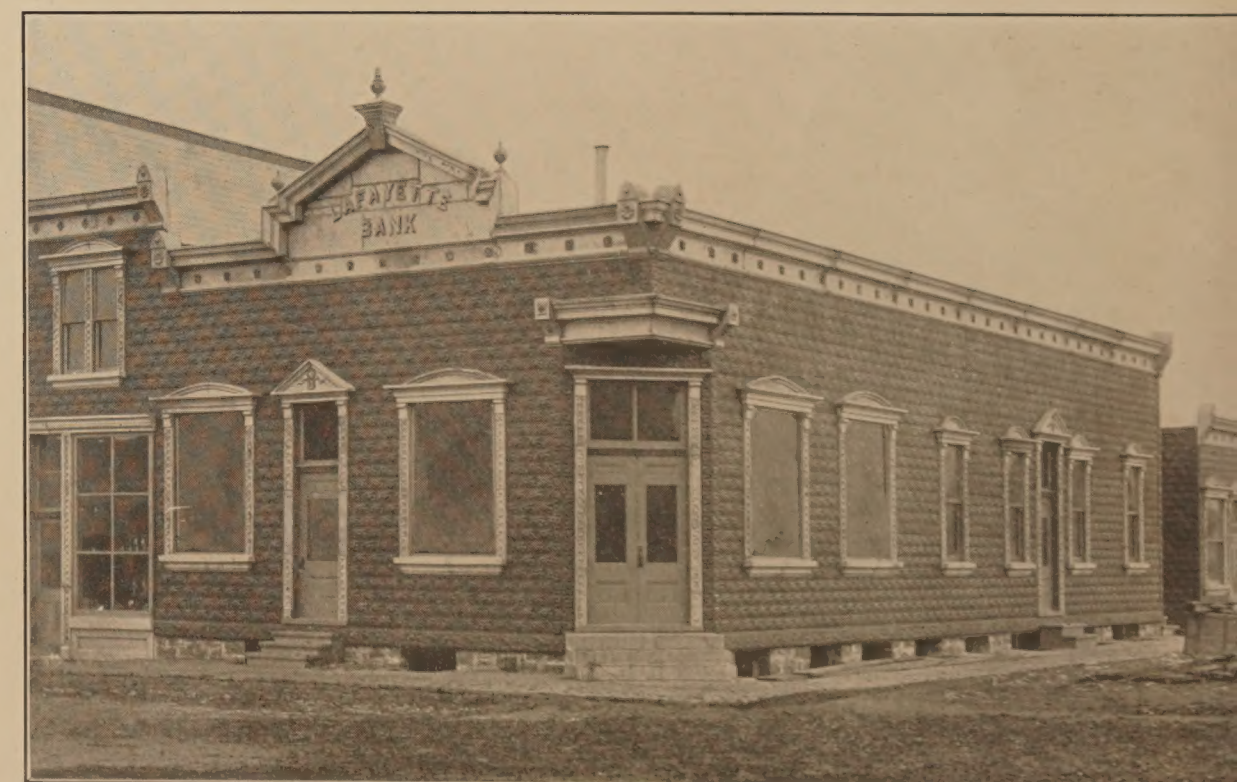
Showing Cornice especially adapted for false fronts, as shown by dotted lines. Body covering, Steel Brick or Rock-faced Brick, page 31. Front Pilaster, Rock-faced, Fig. 158, page 32.

This design makes a cheap, ornamental and up-to-date finish for old buildings.



Fig. 178

Fig. 179



Bank Building, Lafayette, Colo.

These illustrations show our Special Rock-Faced Steel Single Blocks and Corner Quoins. See Figs. 164, 165, 171, 172.

CUTTERS AND CONDUCTOR PIPE

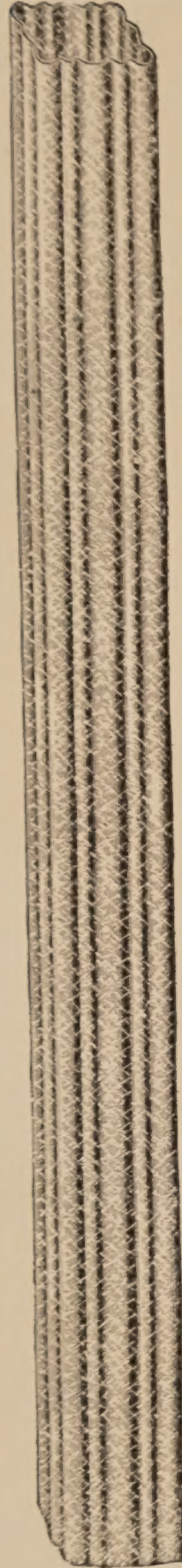
CORRUGATED EXPANDING CONDUCTOR PIPE

Round and Square

Fig. 193

Fig. 194

Fig. 195



Round Expanding Conductor Smooth or Corrugated PRICE LIST.

	No. 28 Galvanized. Per foot.	14-oz. Copper. Per foot.
2 inch	\$0 13	\$0 40
3 "	15	50
4 "	20	65
5 "	25	85
6 "	30	1 00

Square Corrugated Expanding Conductor Pipe PRICE LIST

	No. 28 Galvanized. Per foot.	14-oz. Copper. Per foot.
1 3/4 x 2 1/4 inch (2 inch)	\$0 14	\$0 40
2 3/8 x 3 1/4 " (3 ")	16	50
2 3/4 x 4 1/4 " (4 ")	21	65
3 3/4 x 5 " (5 ")	26	85

"American" Lap Joint Eaves Through

For Slip Joint, add 1c. lineal foot to net.

A PERFECT AND UNIFORM EAVES TROUGH

Made in ten (10) feet lengths of Galvanized Steel.

Made in ten (10) feet lengths of One (IX) Cross

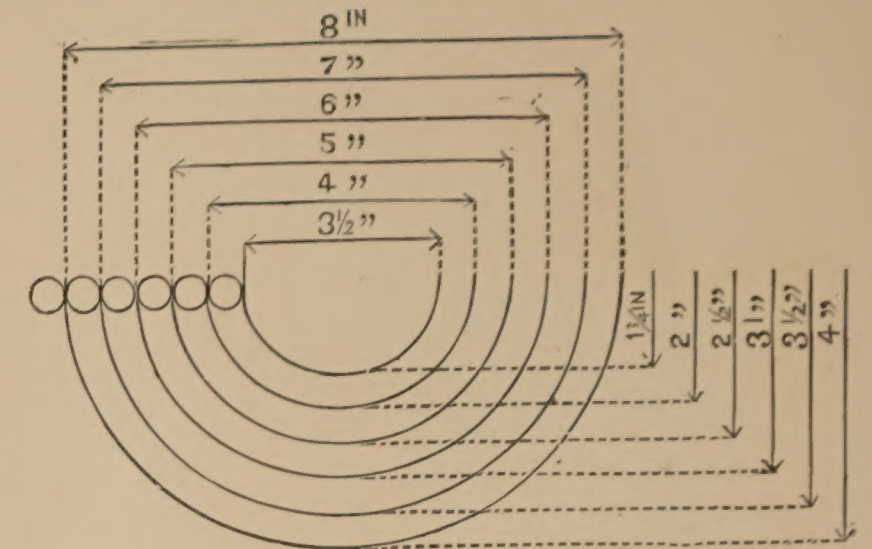
Old-Fashioned Terne.

Made in ten (10) feet lengths IC Terne.

PRICE LIST.

GALVANIZED STEEL.

No. 28 Gauge. 10 feet long. Lap Joint.	
3 inch Galv. (6 inch Girth,) per foot...	13 cents.
3 1/2 " " (7 " ") "	14 "
4 " " (8 " ") "	16 "
4 1/2 " " (9 " ") "	18 "
5 " " (10 " ") "	19 "
6 " " (12 " ") "	23 "
7 " " (14 " ") "	27 "
8 " " (16 " ") "	30 "



NOTE.—Size taken inside of Bead.

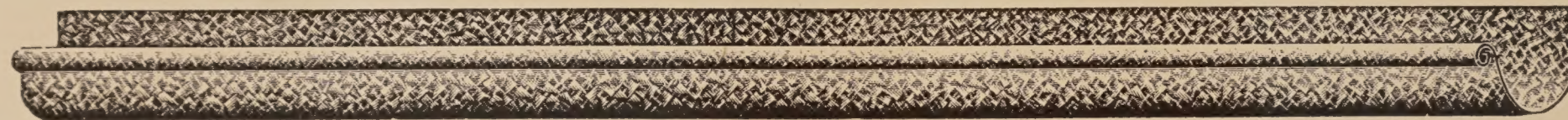
Packed in cases of 250 feet.

For Galvanized Trough heavier than No. 28 gauge, add the following prices per foot to above List Price, and same for Conductor.

No. 27 Gauge	\$0 01
" 26 "	02
" 24 "	06

Grates for Eaves Trough, 25 cts. each.

Fig. 197



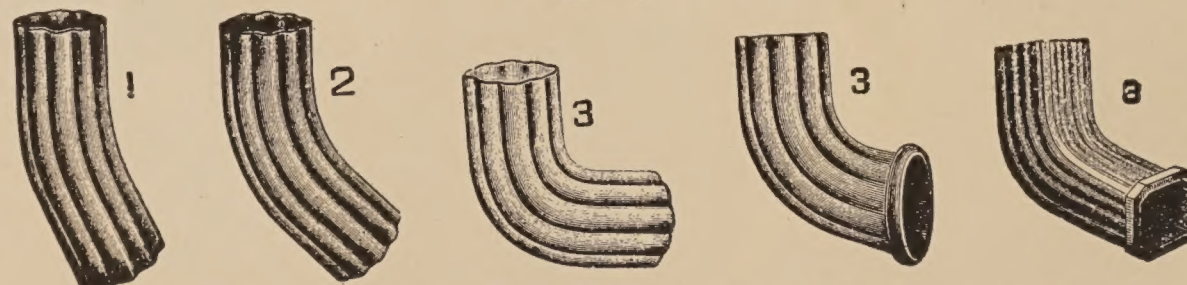
Lap Joint.
Fig. 198



Slip Joint.

State whether right or left is wanted; otherwise half right and half left will be shipped.

Fig. 196



Corrugated Square or Round Expanding Elbows and Shoes

	2-inch.	3-inch.	4-inch.	5-inch.	6-inch.
Elbows	30c.	36c.	48c.	60c.	72c.
Shoes	40c.	48c.	60c.	72c.	84c.

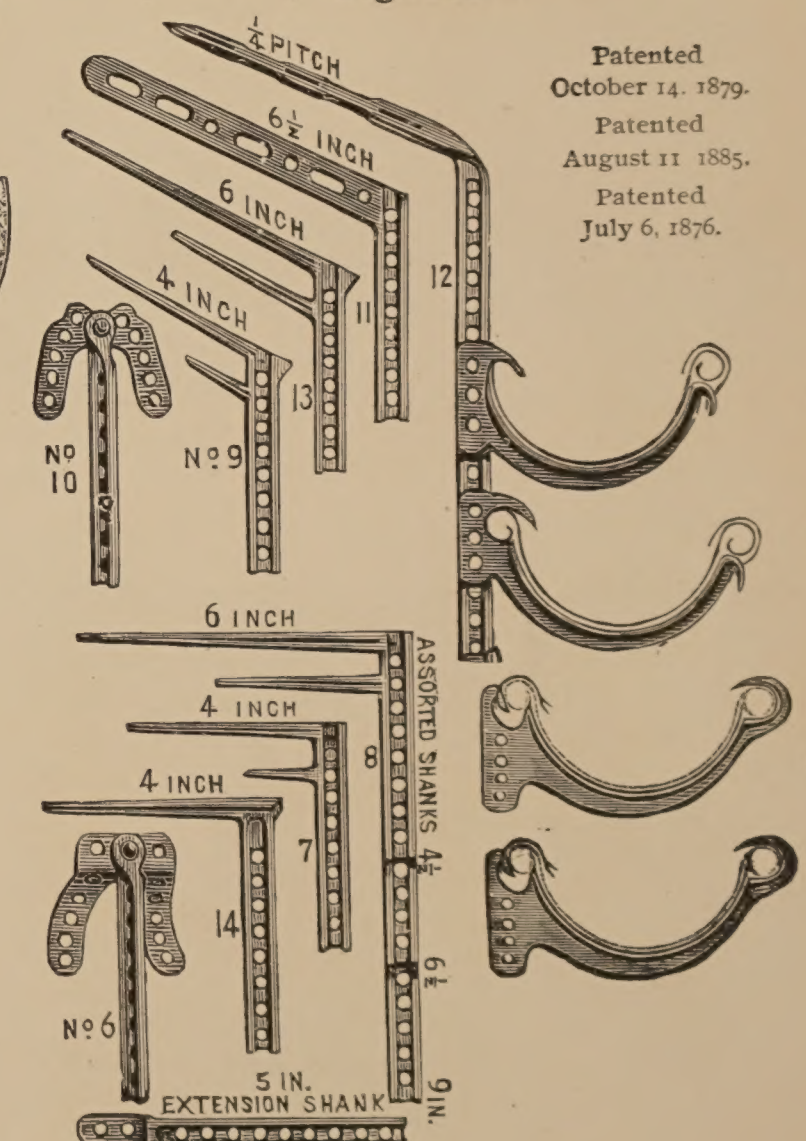
Order Elbows and Shoes by size and number.

Fig. 199



Consolidated List of Shanks and Circles

Fig. 200



Patented
October 14, 1879.
Patented
August 11, 1885.
Patented
July 6, 1876.

GEM CIRCLE
For Single
Beads.

PENN CIRCLE
For Double
Beads.

STANDARD
CIRCLE
For 1/2 or 3/4
Single Beads.

GLOBE CIRCLE
For 3/4 or 1
Beads.

Star Ventilators and Chimney Caps

Fig. 201



GALVANIZED IRON

PRICE LIST

2 inch.....\$1 00	16 inch.....\$20 00
2½ " 1 00	17 " 23 00
3 " 1 50	18 " 27 00
3½ " 1 50	19 " 30 00
4 " 1 75	20 " 33 00
4½ " 2 00	22 " 36 00
5 " 2 50	24 " 40 00
5½ " 2 85	26 " 50 00
6 " 3 40	28 " 56 00
7 " 4 00	30 " 65 00
8 " 4 65	32 " 80 00
9 " 5 20	34 " 100 00
10 " 5 75	36 " 120 00
11 " 6 20	40 " 180 00
12 " 6 75	44 " 200 00
13 " 9 00	48 " 240 00
14 " 13 00	54 " 300 00
15 " 16 00	60 " 360 00

Discount.....

IF SQUARE OR OBLONG BASE IS REQUIRED
IT IS CHARGED EXTRA.

The Penn Corrugated Ventilator, made of Heavy Galvanized or 12 to 18 ounce Copper

Fig. 202

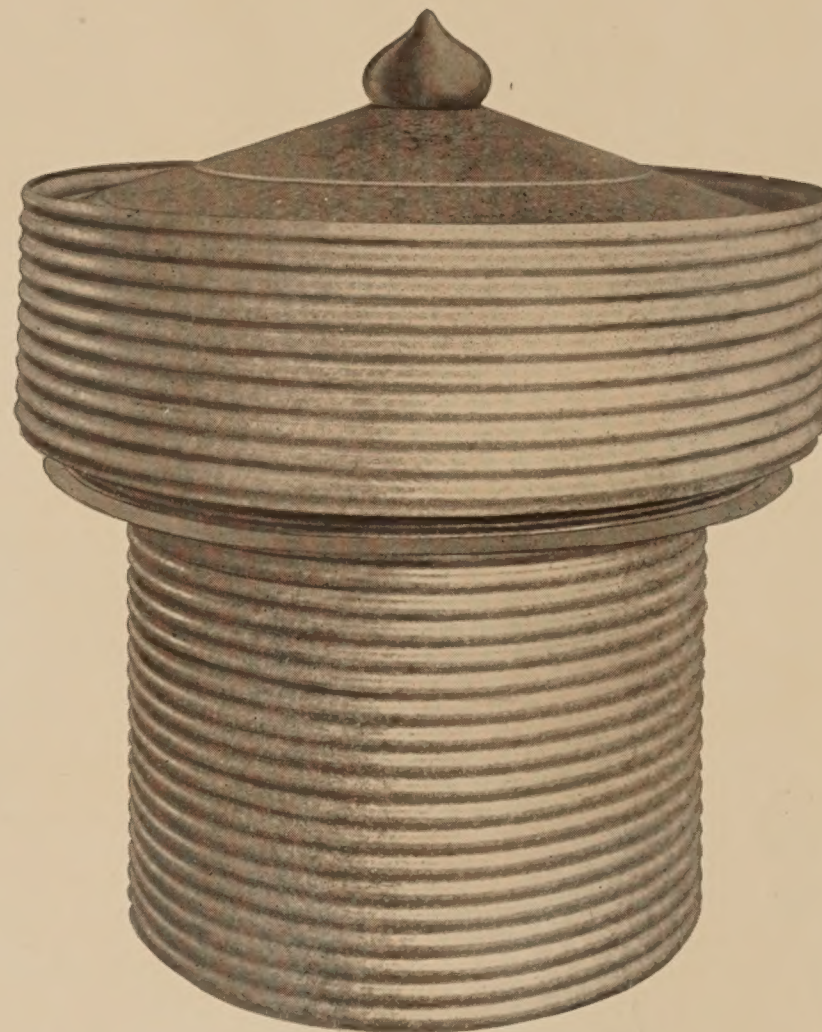
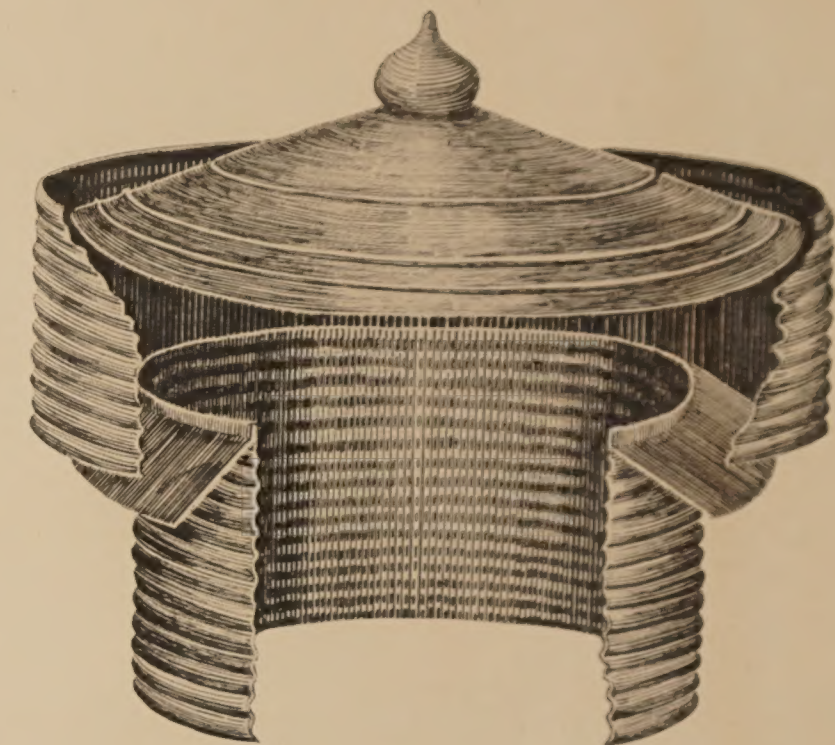


Fig. 203



Section Penn Ventilator

Galvanized Stock 24 to 20 Gauge, Copper Stock 12 to 30 ounces. The strongest and best Ventilator for large Buildings. Any size from 18-inch Diameter up to 5 feet. Bases Extra; Square or Round. Not kept in stock; made only to order. Special prices quoted.

Fig. 201



Both Trade-Marks registered in U. S. Patent Office.

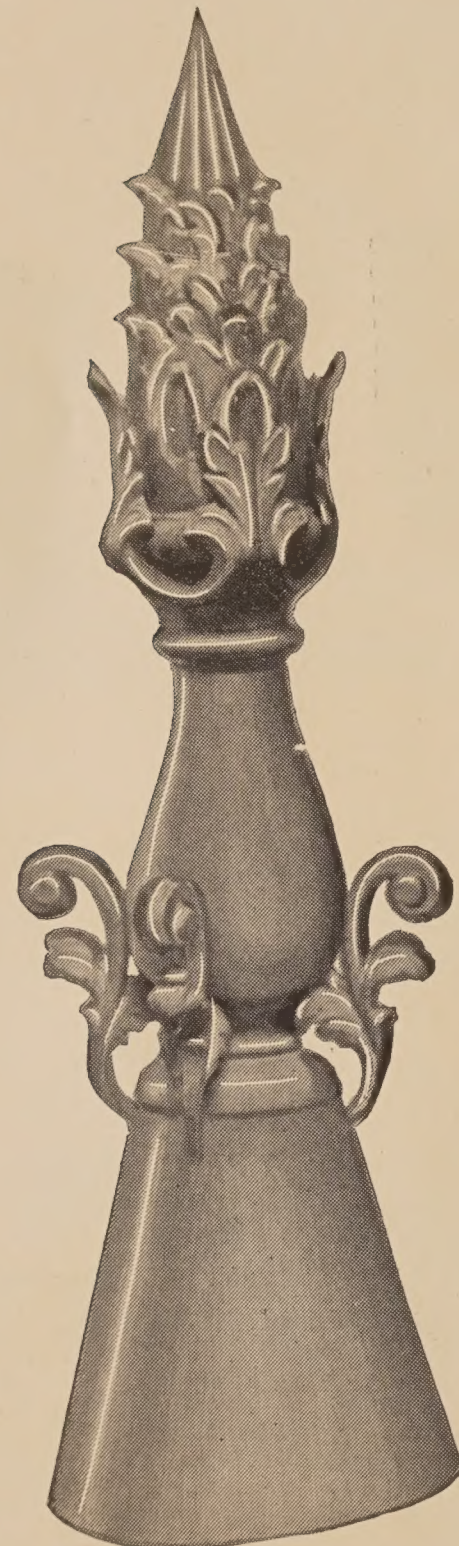
FINIALS, ZINC SADDLES and CRESTING BLOCKS

Fig. 336



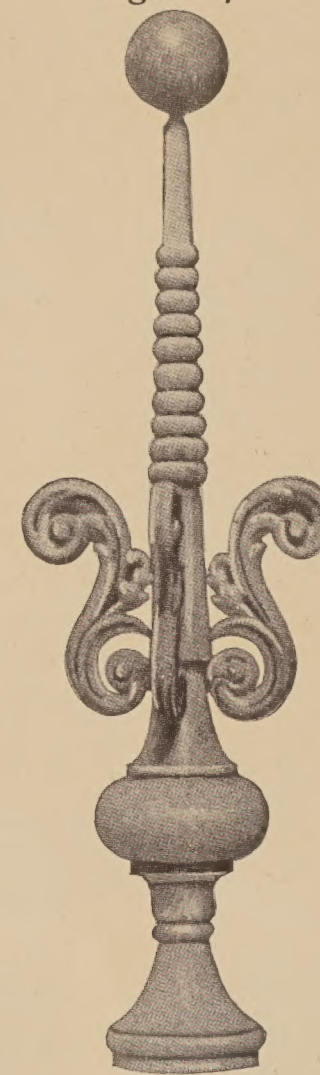
Opening at base, 12 inches.
Height, 48 inches.
Net, \$9.00

Fig. 337



Opening at base, 12 inches
Height, 46 inches.
Net, \$10.00.

Fig. 204



Height, 43 inches.
Neck, 6 inches.
Price, \$6.00.

Fig. 205



Height, 24 inches.
Price, \$6.00.

Fig. 206



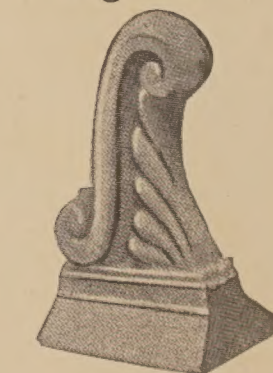
Height, 12 inches.
Price, \$2.25.

Fig. 207



10 x 10 inches.
Price, \$1.00.

Fig. 208



Height, 12 inches.
Price, \$2.50.

Fig. 209

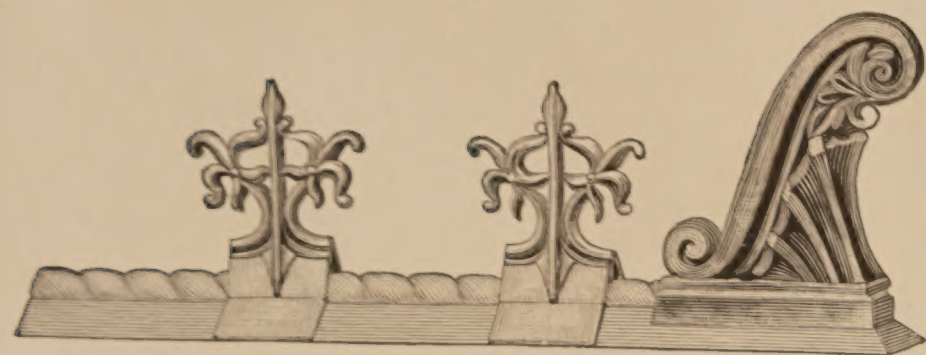


Height, 16 inches.
Price, \$2.00.

FANCY RIDGING, FINIALS and SADDLES

MANUFACTURED FROM ZINC AND GALVANIZED MATERIALS

Fig. 210



Finials, 12, 15 and 24 inches, with Apron. Cresting Ornaments, 11 inches high.
Diameter of Ridge Row, 2 inches.

Fig. 215

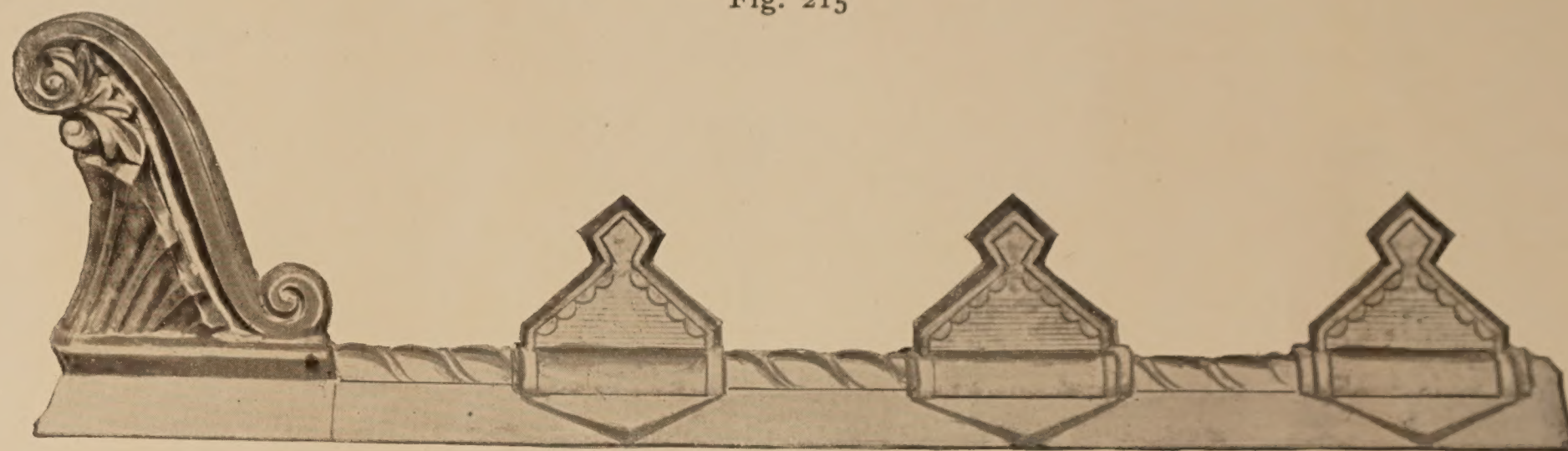
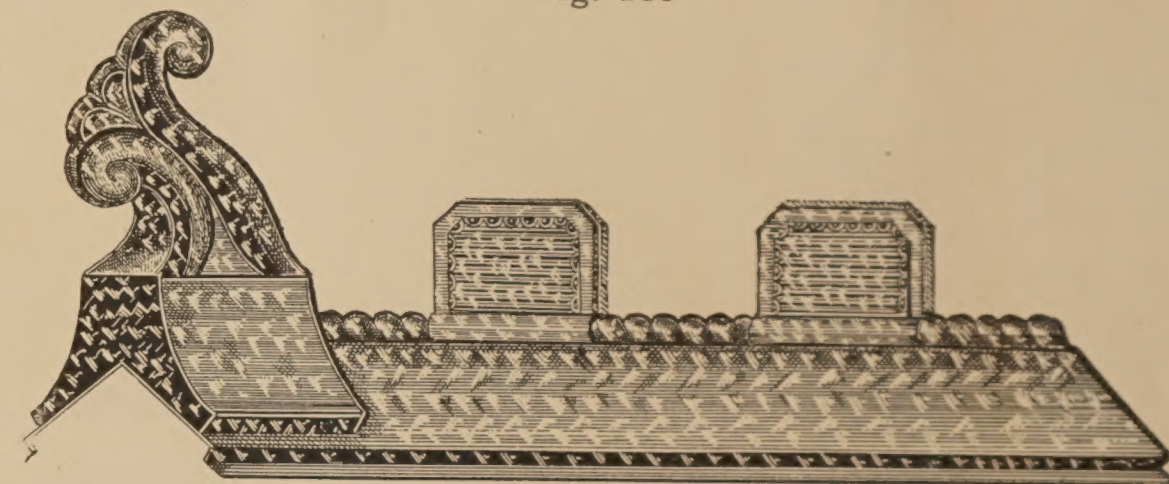


Fig. 211

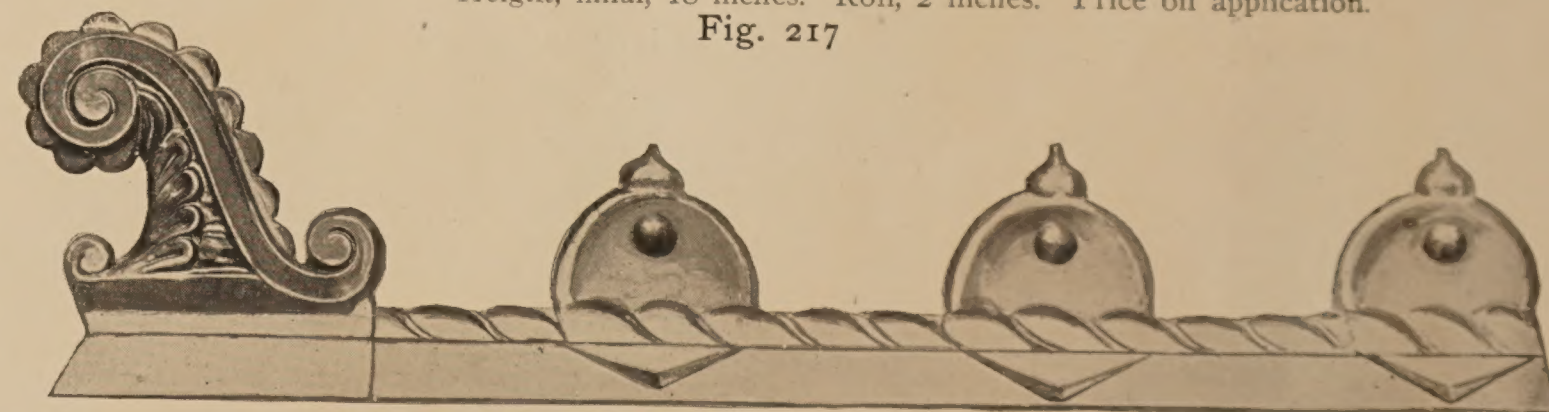
Height of Cresting Blocks, 9 inches from top of Ridge.

Fig. 216



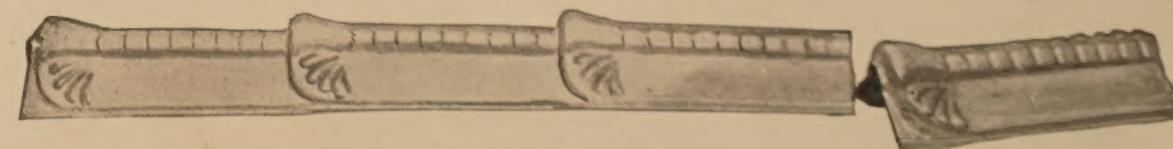
Height, finial, 18 inches. Roll, 2 inches. Price on application.

Fig. 217



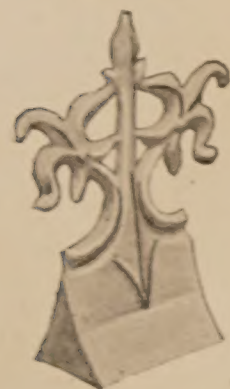
Height of Cresting Blocks, 8 inches from top of Ridge.

Fig. 218



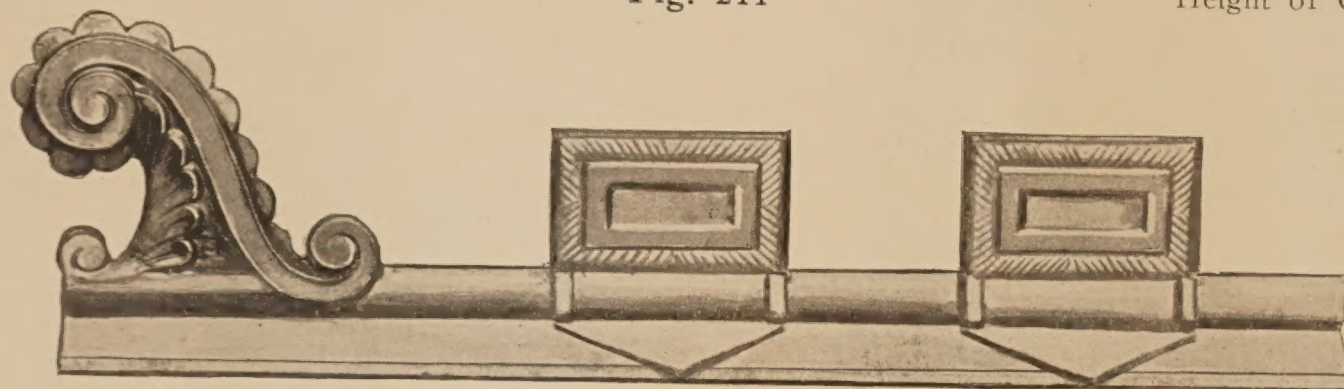
Japanese Hip. Each section covers 12 inches.

Fig. 212



10 x 14 inches. Cresting Block.

Fig. 213

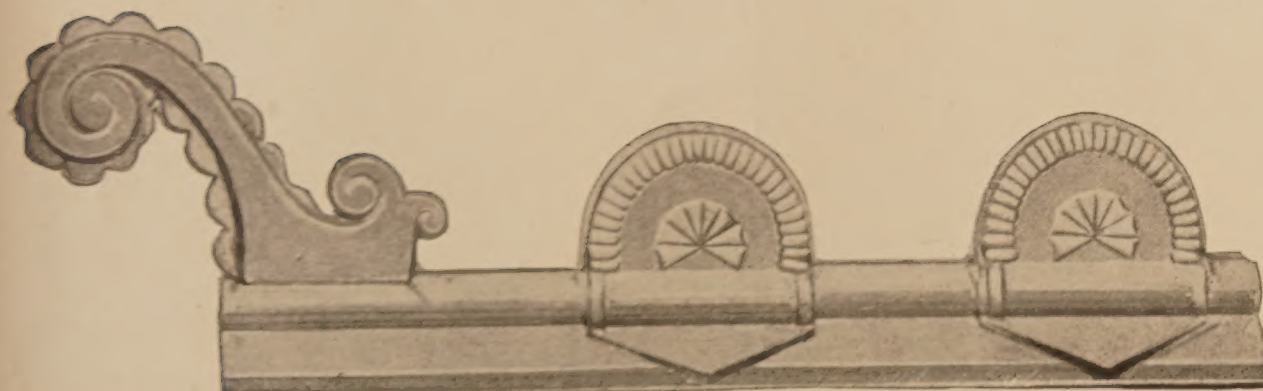


Height of Cresting Blocks, 7 1/4 inches from top of Ridge.



Rope Mould, Ridging. Girth, 8 1/2 inches. Rope roll, 2 1/4 inches diameter.

Fig. 214



Height of Cresting Blocks, 7 1/4 inches from top of Ridge.

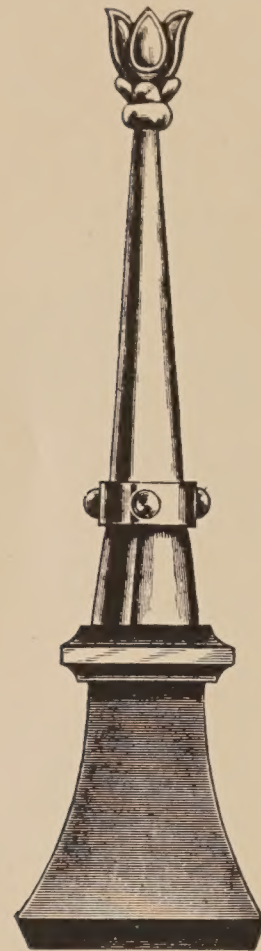
FINIALS and CRESTING BLOCKS

Fig. 219



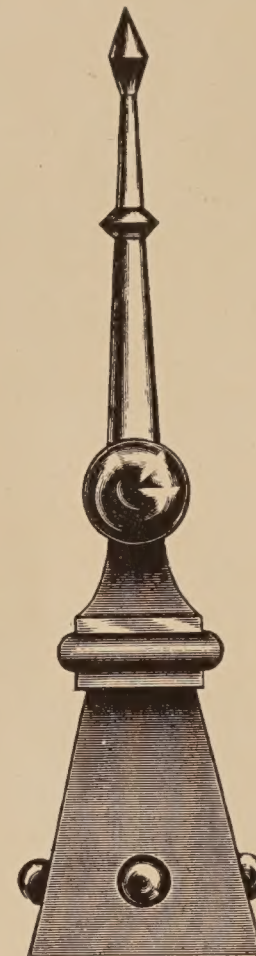
Height, 3½ feet.
Price, \$6.50 net.

Fig. 220



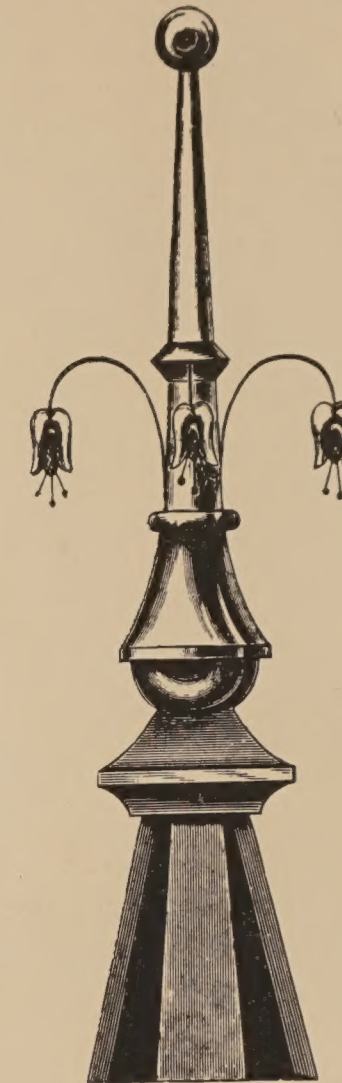
Height, 3½ feet.
Price, \$5.50 net.

Fig. 223



Height, 3½ feet.
Price, \$5.00 net.

Fig. 224



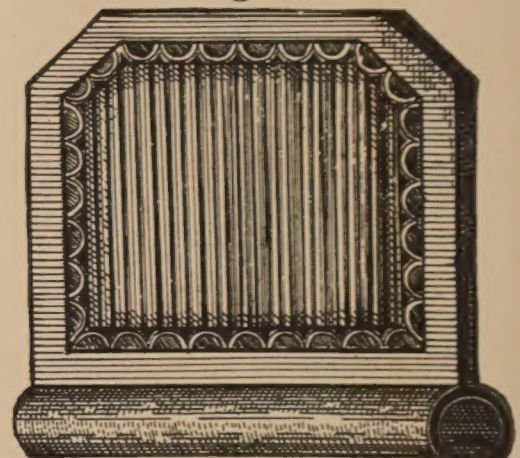
Height, 4 feet.
Price, \$10.00 net

Fig. 227



Roll, 2 inches. 35 cts.

Fig. 228



8 x 8 inches.
Roll, 2 inches. 35 cts.

Fig. 221



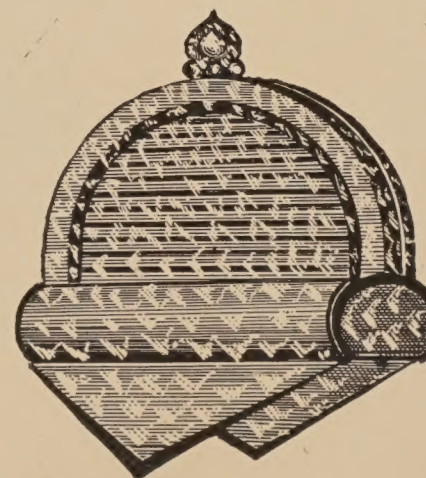
Height, 19½ inches.
Zinc Base, 8½ inches.
\$3.75.

Fig. 222



Height, 20 inches.
Zinc Base, 8½ inches.
Width, 13 inches. \$5.50.

Fig. 225



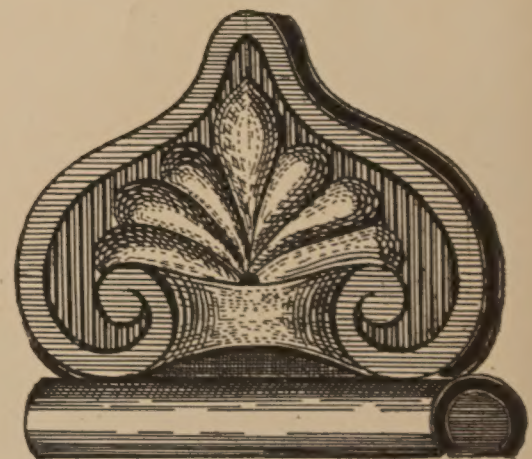
Height, 10 inches. Width, 8 inches
Roll, 2 inches. 35 cts.

Fig. 226



Height, 8 inches. Width, 10 inches.
Roll, 2 and 3 inches. 35 cts.

Fig. 229



8 x 8 inches.
Roll, 2 and 3 inches. 35 cts.

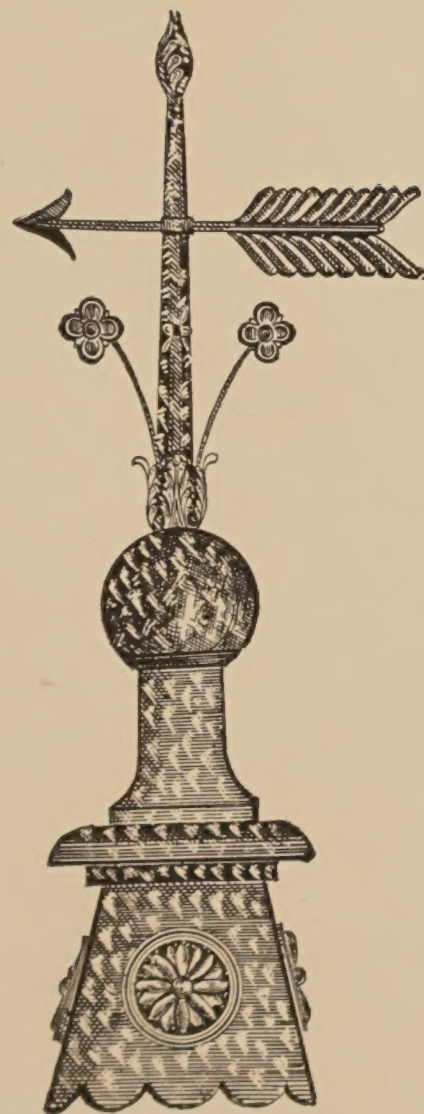
FINIALS

Fig. 230



Height, 3 feet.
Base, 6½ inches.
Net, \$5.00

Fig. 231



Height, 3 feet. Base, 10 inches.
Net \$12.00

Fig. 232



Height, 3 feet 3 inches.
Base, 8½ inches.
Round. Net, \$7.50

Fig. 233



Height, 3 feet 3 inches.
Base, 6½ inches.
Round. Net, \$5.00.

Fig. 234



Height, 4 feet 6 inches.
Price, net, \$10.00.

GALVANIZED CORNICES ALSO MADE OF COPPER

We submit the following designs to give some idea of the character of work turned out by us in this line. Any of the designs shown are subject to modification, and can be either enlarged or reduced to suit the requirements of the customers at a small expense.

We will quote prices on any special design, if accurate drawings and specifications are sent us.

Our facilities in this branch of our business have been greatly increased, and we can insure our customers good workmanship and promptness in filling orders.

Each Cornice must be made up after measurements are received, which requires time, and it is important that orders be placed early, so that they may be delivered by the time the goods are needed.

In ordering Cornice, *always* give extreme length, including End Trusses. We will positively not be responsible for any errors made in measuring, nor will *any change* be made after work is started, except at the expense of *parties* ordering.

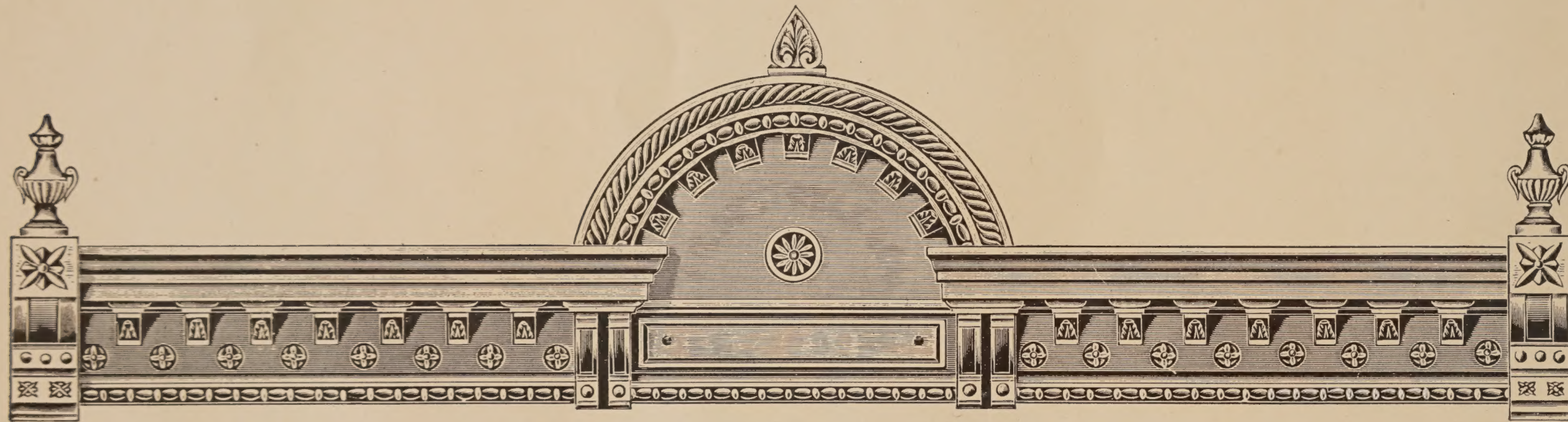
Trusses are all made with 12-inch face, unless otherwise ordered.

Cornices are all special, and the importance of having correct measurements before the work is started is plain to everyone.

WE QUOTE ON COPPER CORNICES ONLY WHEN SPECIFICATIONS ARE SENT US
CRATING CHARGED FOR AT COST

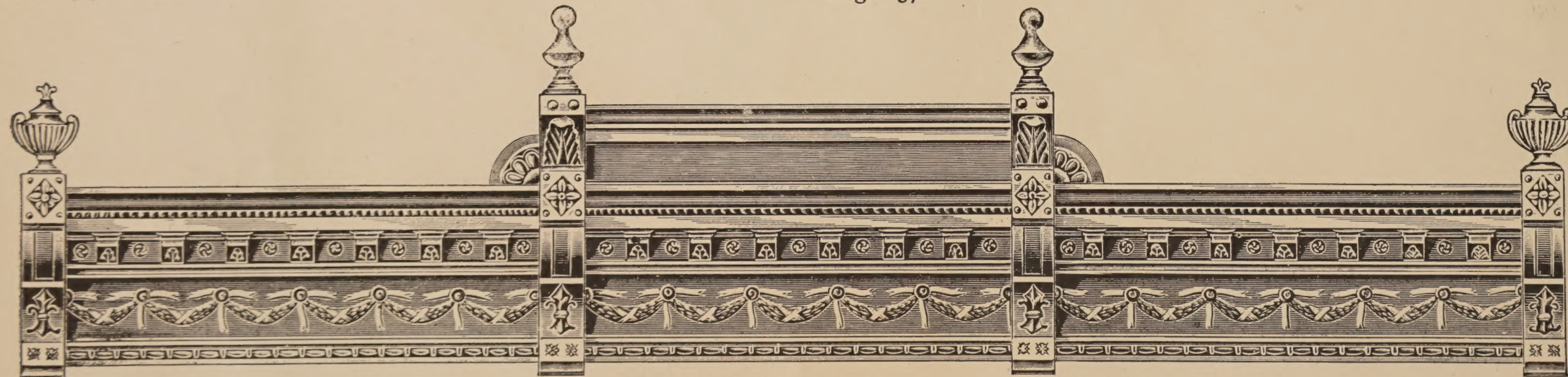
CORNICES, PEDIMENTS, URNS, CORNER BLOCKS, ETC.

Fig. 236



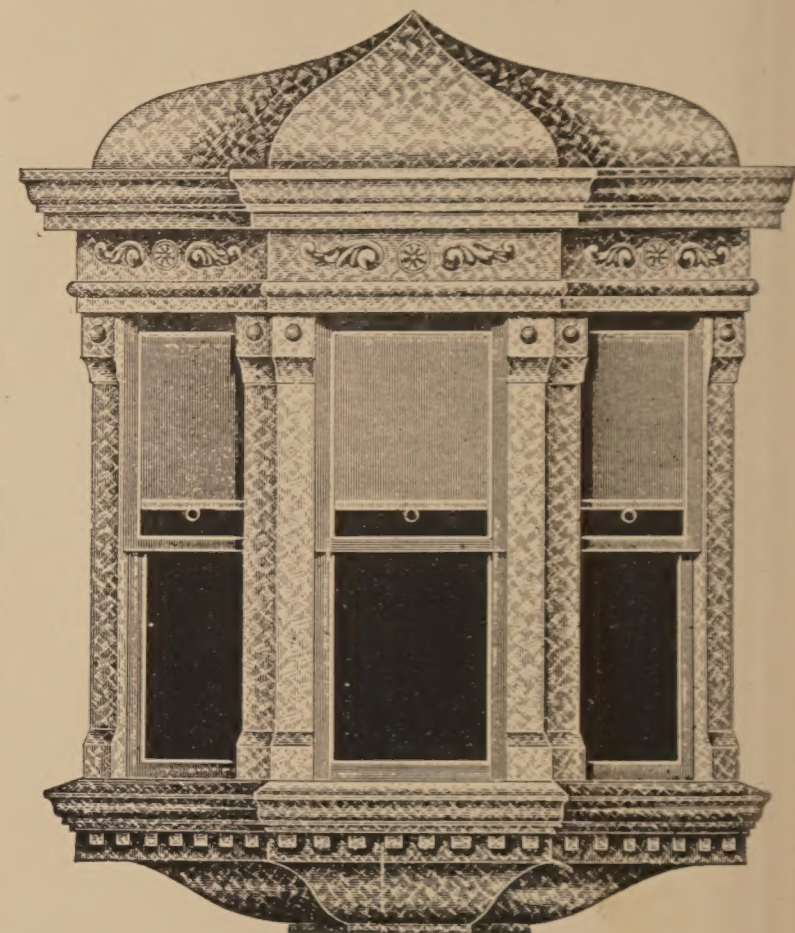
Height, 40 inches. Projection, 24 inches. Price, per lineal foot, \$3.25. End Trusses, \$6.00 each. Urns, \$6.00. Pediments, 10 feet wide, \$30.00 each. Letters, 12 inches, when wanted, \$1.00 each.

Fig. 237



Height, 48 inches. Projection, 26 inches. Price, per lineal foot, \$4.00. End Trusses, \$6.25 each. Urns, \$6.00 each. Pediments, 7 feet wide, \$18.00 each. Letters, when wanted, \$1.00 each, 12 inches high.

Fig. 235



BAY WINDOWS

Made of Best Bloom Galvanized Iron and Copper. We make every description of Bay Windows, and if furnished measurements and description of what is wanted, we will submit design and estimates. Prices according to size and style. Crating charged for at cost.

CROWN and BELT MOULDINGS

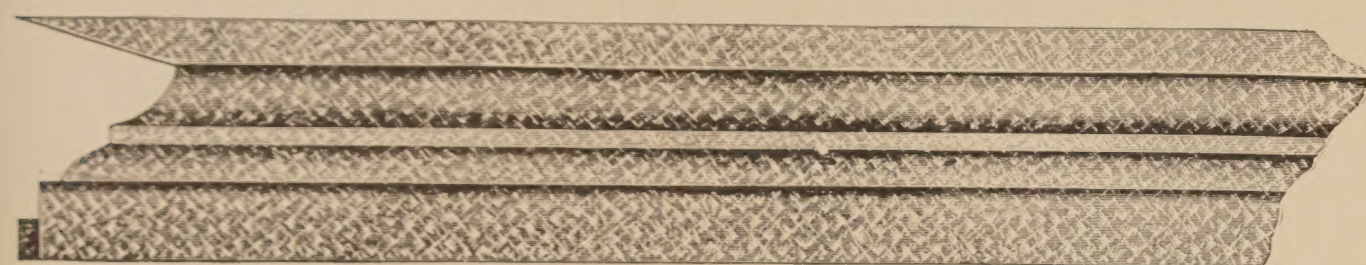
Made of Best Bloom Galvanized Iron.

Prices on copper and painted steel or iron quoted on application.

If you do not find the size and style you desire, and will give us an idea of your wants, we will be pleased to submit designs and prices.

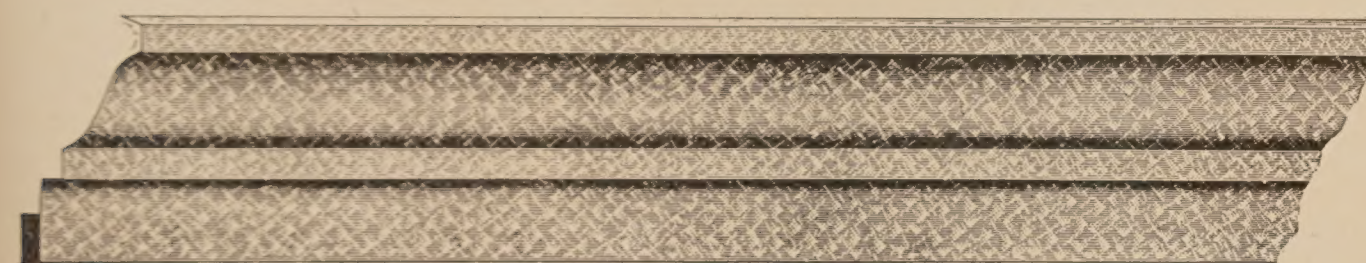
In ordering, please state if mouldings are to be used for wood or brick, as a different construction is necessary.

Fig. 238



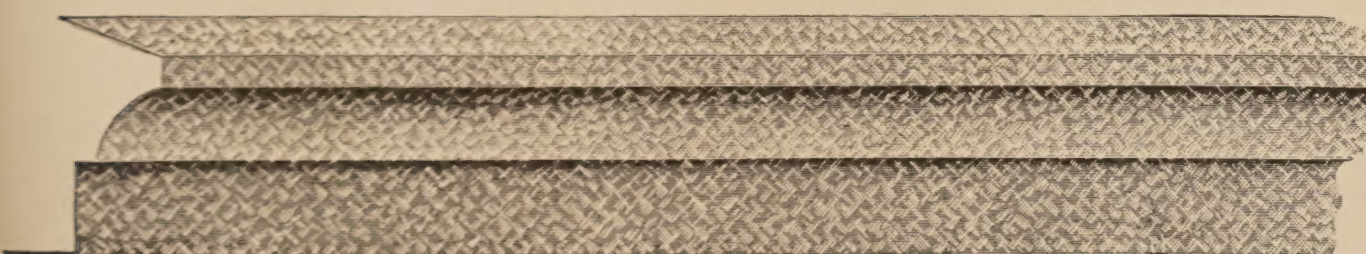
Height, 10½ in. Projection, 4½ in. Price, Galvanized 20 cents per foot.

Fig. 239



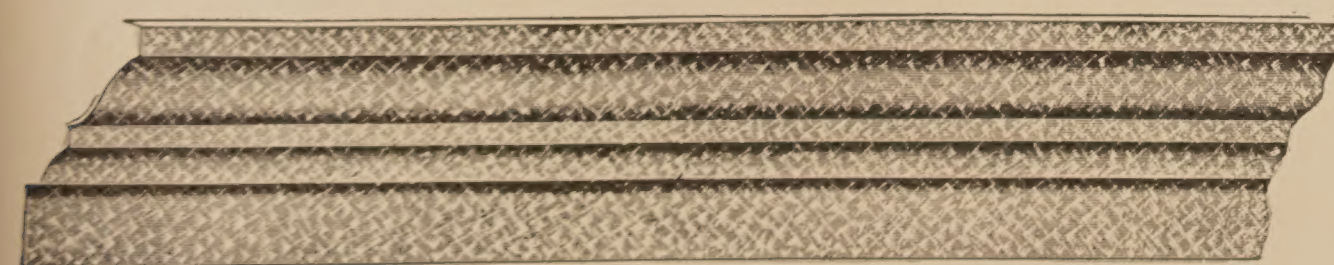
Height, 13 in. Projection, 6½ in. Price, Galvanized 22 cents per foot.

Fig. 240



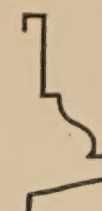
Height, 10 in. Projection, 5½ in. Price, Galvanized 20 cents per foot.

Fig. 241



Height, 12 in. Projection, 7 in. Price, Galvanized 22 cents per foot.

Fig. 242



Height, 9 in.
Projection, 4 in.
Price, per ft., 15 cts.

Fig. 243



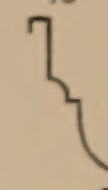
Height, 9 in.
Projection, 5 in.
Price, per ft., 18 cts.

Fig. 244



Height, 9 in.
Projection, 4 in.
Price, per ft., 15 cts.

Fig. 245



Height, 9 in.
Projection, 4½ in.
Price, per ft., 18 cts.

Fig. 246



Height, 10 in.
Projection, 4 in.
Price, per ft., 18 cts.

Fig. 247



Height, 10 in.
Projection, 4 in.
Price, per ft., 18 cts.

Fig. 248



Height, 10 in.
Projection, 4½ in.
Price, per ft., 18 cts.

Fig. 249



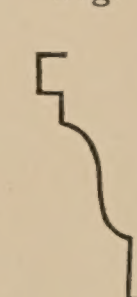
Height, 10 in.
Projection, 5 in.
Price, per ft., 18 cts.

Fig. 250



Height, 12 in.
Projection, 5½ in.
Price, per ft., 20 cts.

Fig. 251



Height, 12 in.
Projection, 6 in.
Price, per ft., 20 cts.

Fig. 252



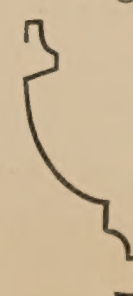
Height, 14 in.
Projection, 7 in.
Price, per ft., 22 cts.

Fig. 253



Height, 14 in.
Projection, 6 in.
Price, per ft., 22 cts.

Fig. 254



Height, 16 in.
Projection, 6 in.
Price, per ft., 24 cts.

Fig. 255



Height, 16 in.
Projection, 7½ in.
Price, per ft., 24 cts.

Fig. 256



Height, 16 in.
Projection, 7 in.
Price, per ft., 30 cts.

Fig. 338



Height, 16 in.
Projection, 8 in.
Price, per ft., 30 cts.

A COMPLETE STAMPED GALVANIZED CORNICE

That Will Produce the Same Effect as when using Expensive Zinc Ornaments

Fig. 257



Stamped Galvanized Cornices, composed of three members (or pieces) Top member, $6\frac{1}{2} \times 6\frac{1}{2}$ inches x 8 feet. Centre member, $24 \times 17\frac{1}{4}$ or $17\frac{1}{4} \times 96$ inches. Bottom member, 4×96 inches. Either member is furnished separately or soldered together in 8-foot lengths, as above illustrated. Price, per lineal foot, \$1.10, complete.

Fig. 258



Top member, $6\frac{1}{2} \times 6\frac{1}{2} \times 96$ inches. Centre member, $13\frac{1}{2} \times 96$ inches. Bottom member, 4×96 inches. Price, per lineal foot, 90 cents, complete.

Fig. 259



Renaissance Cornice. Projection, $6\frac{1}{2}$ inches. Drop $6\frac{1}{2}$ inches. Girth, 12 inches. Price, per lineal foot, 16 cents.

GALVANIZED CORNICES

Fig. 260



Height, 84 in. Projection, 36 in. Price, per lineal foot, \$7.00. End Trusses, \$12.00 each. Mitres, \$5.00 each.

CORNICES—Continued

Fig. 261

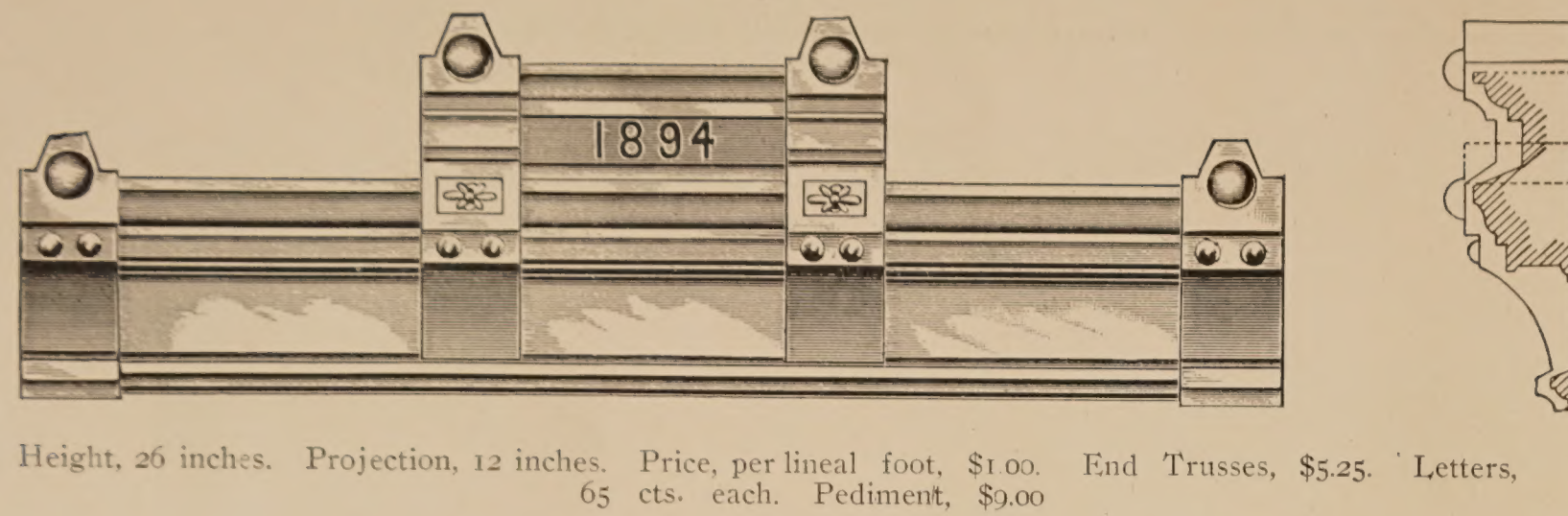


Fig. 262

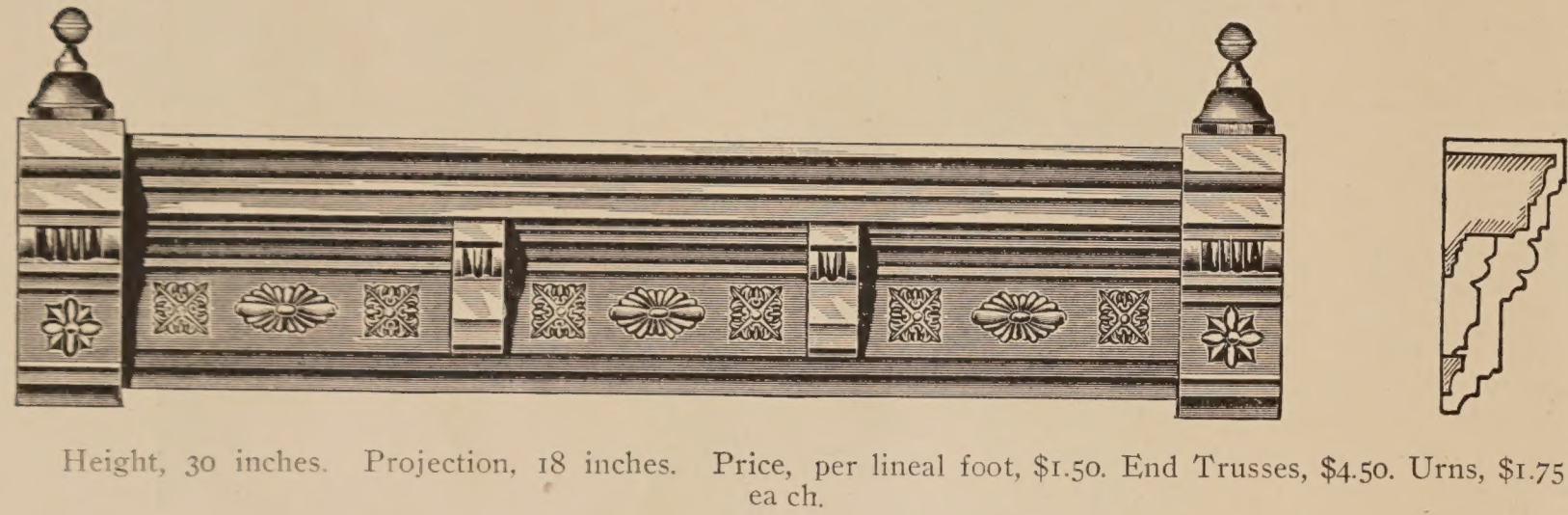


Fig. 263

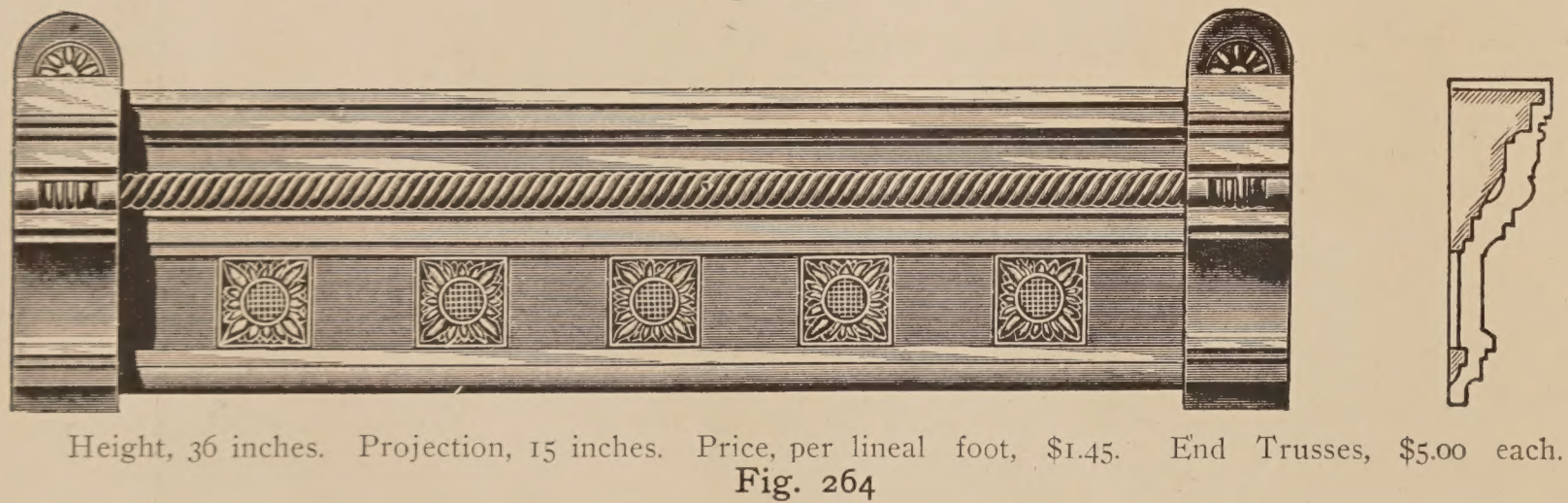


Fig. 264



Fig. 265

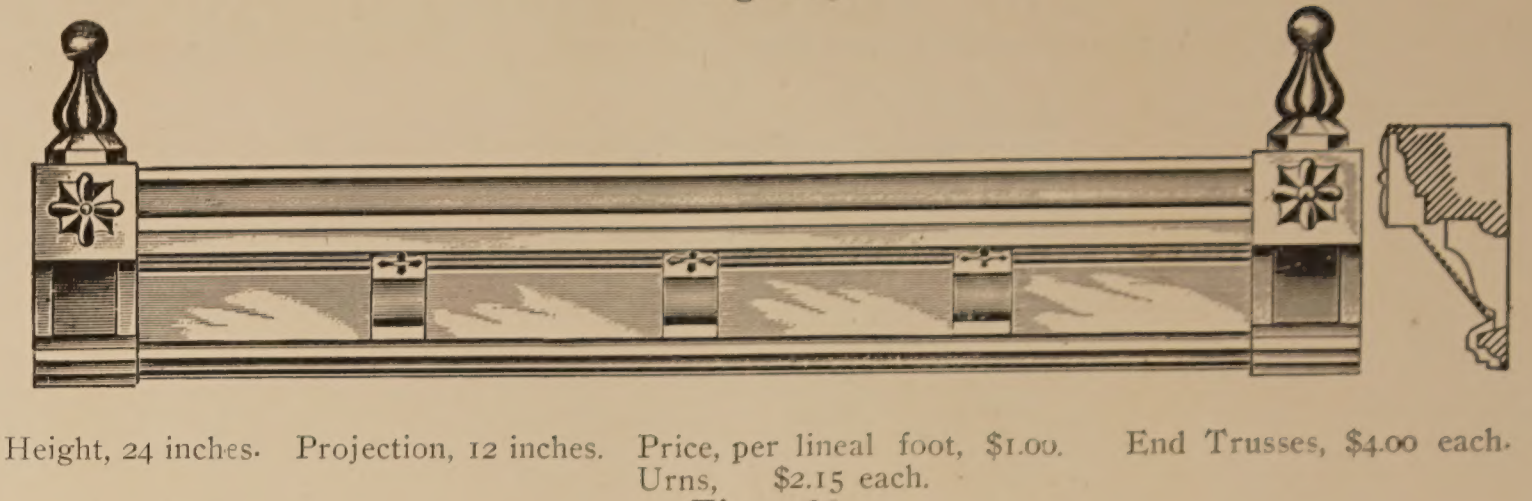


Fig. 266

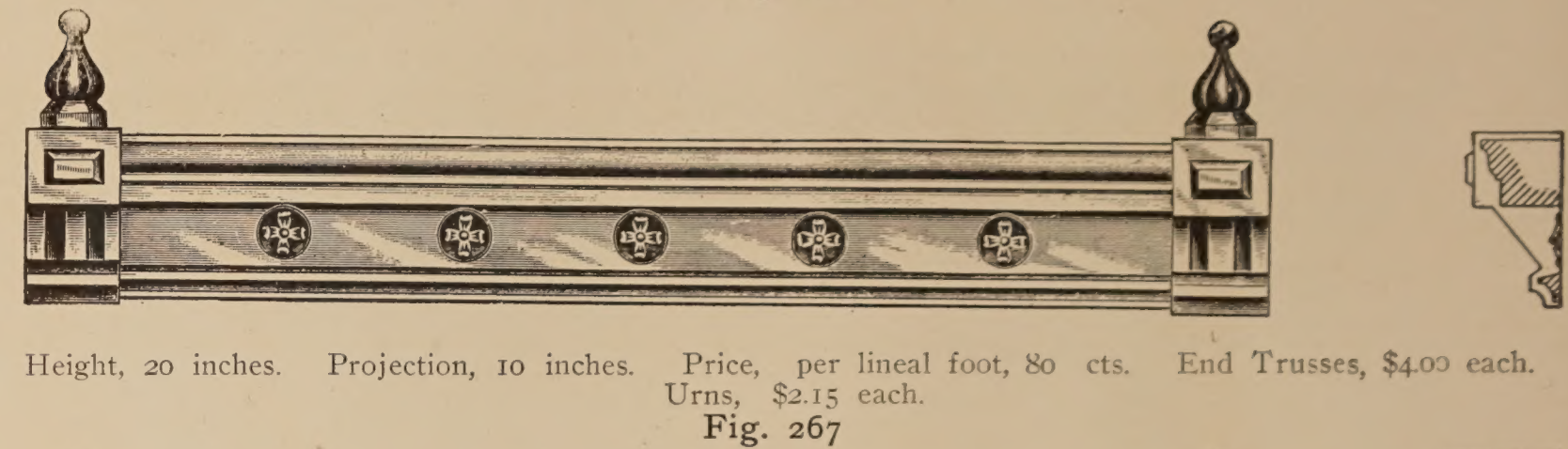


Fig. 267

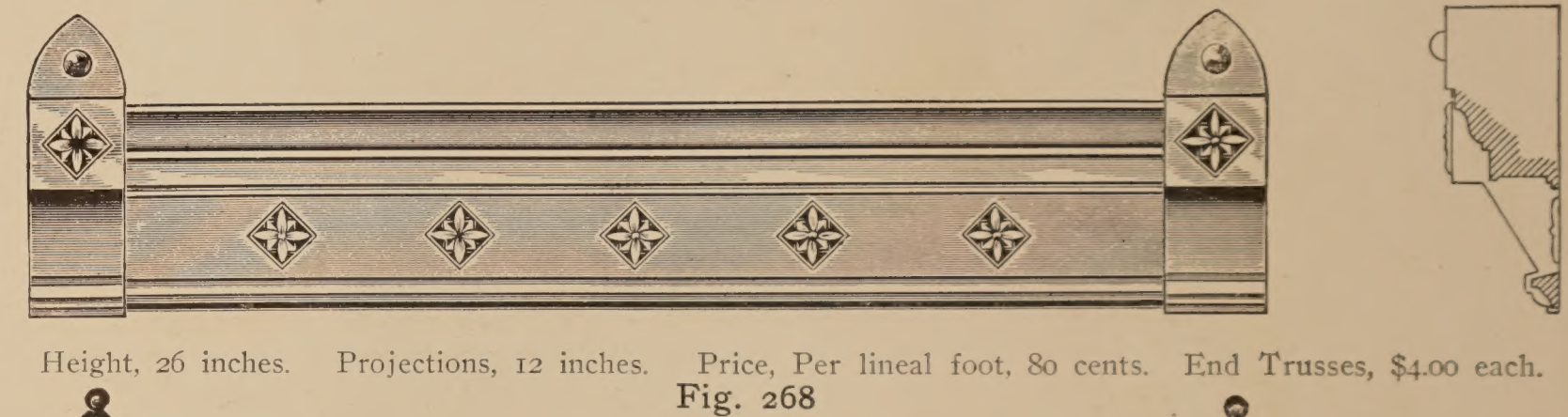


Fig. 268

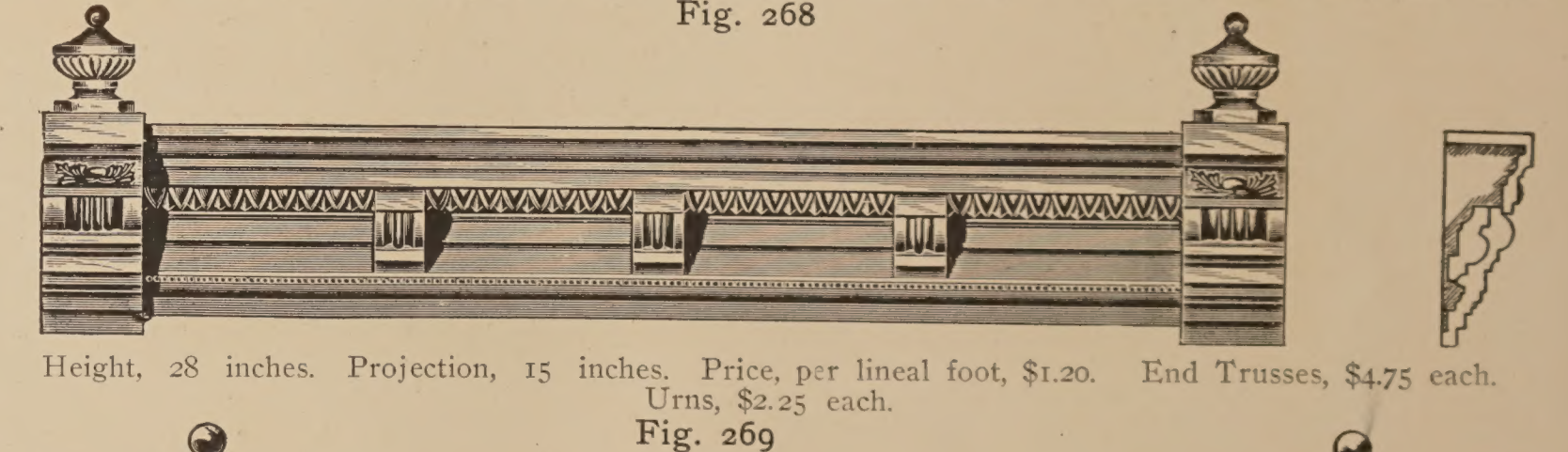


Fig. 269

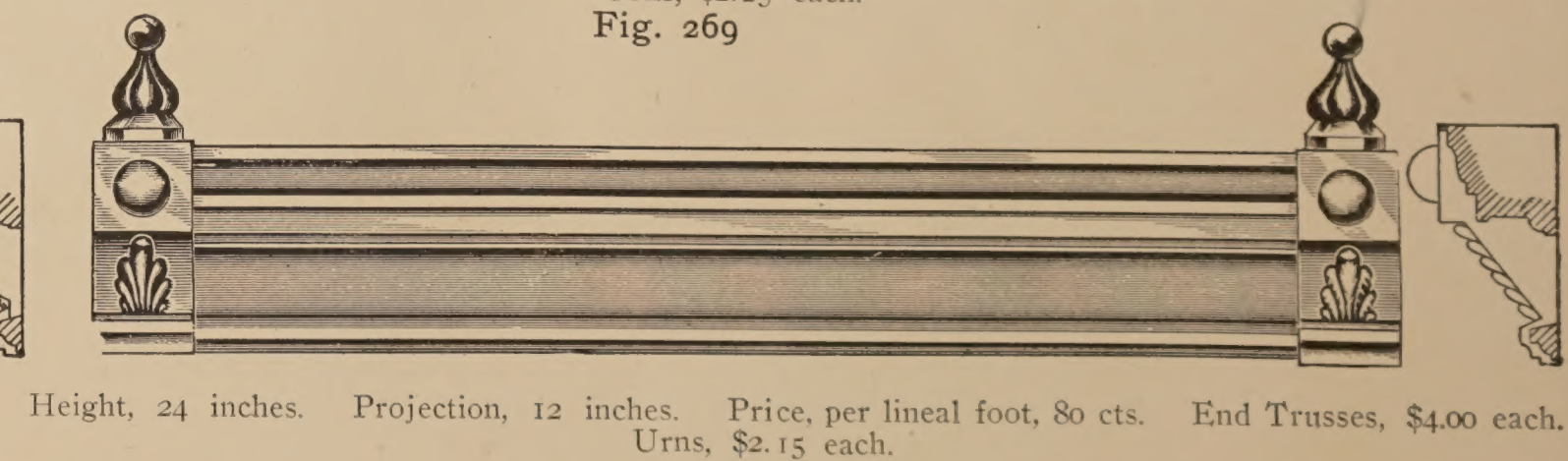
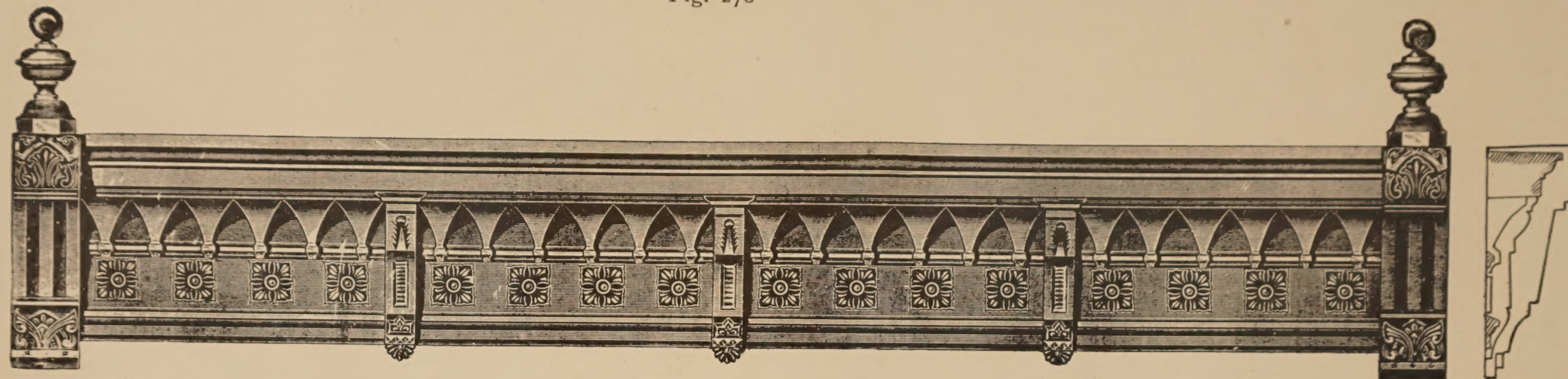


Fig. 270



Height, 42 inches. Projection, 26 inches. Price per lineal foot, \$2.25
Trusses, \$5.00 each. Urns, \$2.00 each.

Fig. 271



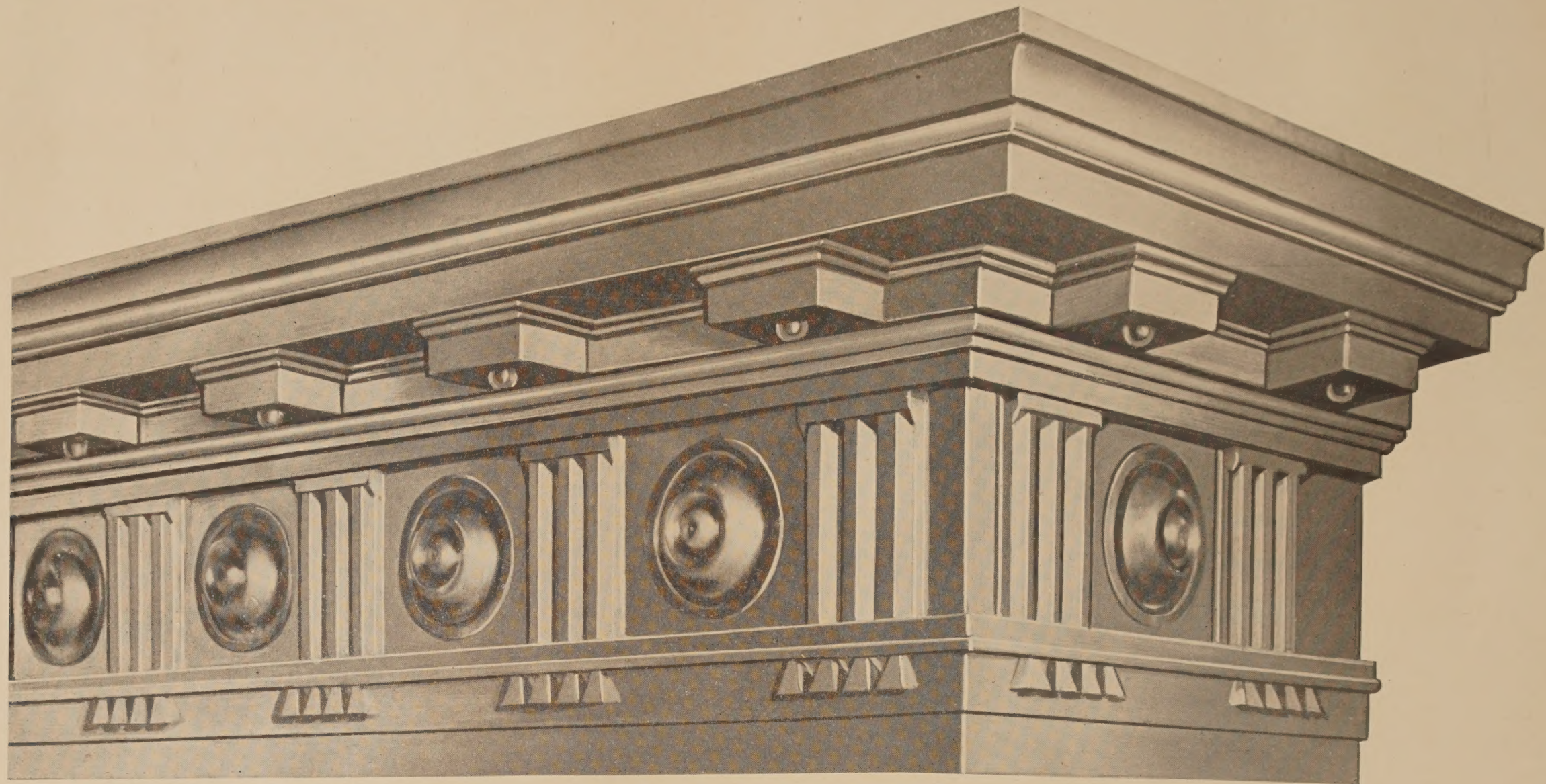
Height, 60 in. Projection, 26 in. Price, per lineal foot, \$4.50. End Trusses, \$8.00 each. Urns, \$2.00 each. Letters, \$1.00 each.

Fig. 272



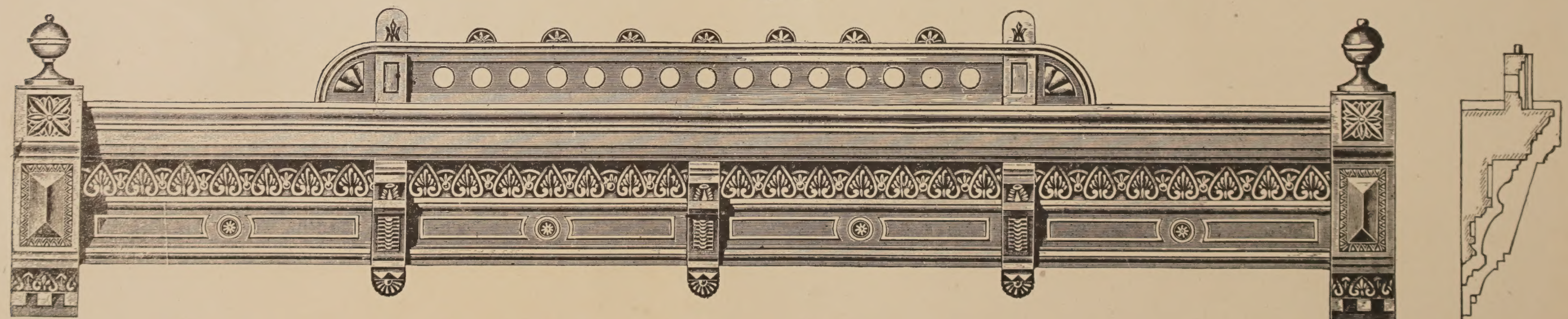
Height, 27 in. Projection, 27 in. Price, per lineal foot, \$2.60. Mitres, \$3.75.

Fig. 273



Strictly Classic Cornice. Height, 42 in. Projection, 20 in. Price, per lineal foot, \$9.00.
 Strictly Classic Cornice. Height, 20 in. Projection, 7 in. Price, per lineal foot, \$6.00.

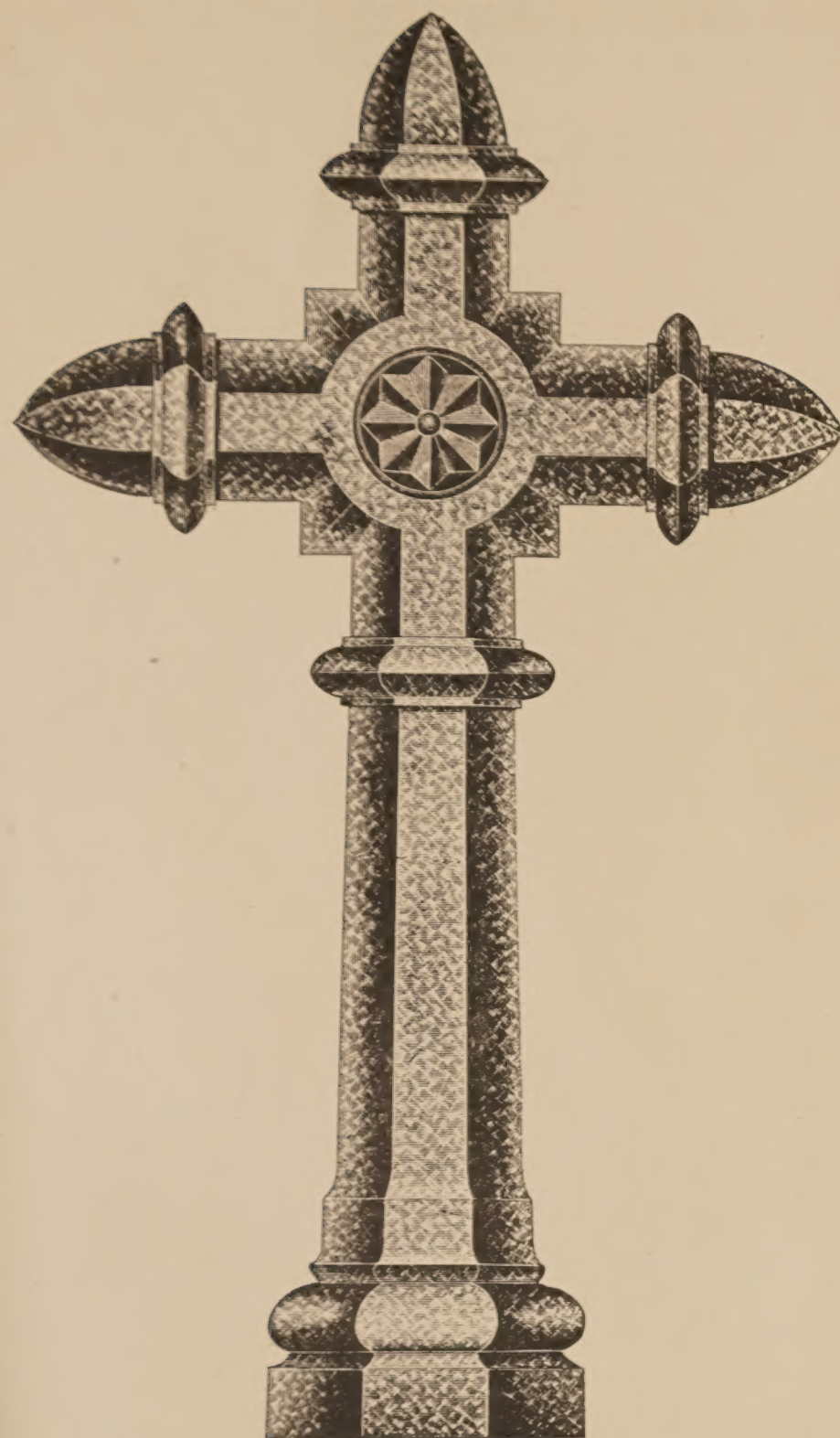
Fig. 274



Height, 42 in. Projection, 26 in. Price, per lineal foot, \$2.50. Trusses, \$6.50 each. Urns, \$1.80 each.
 Pediment, 8 feet long, \$20.00.

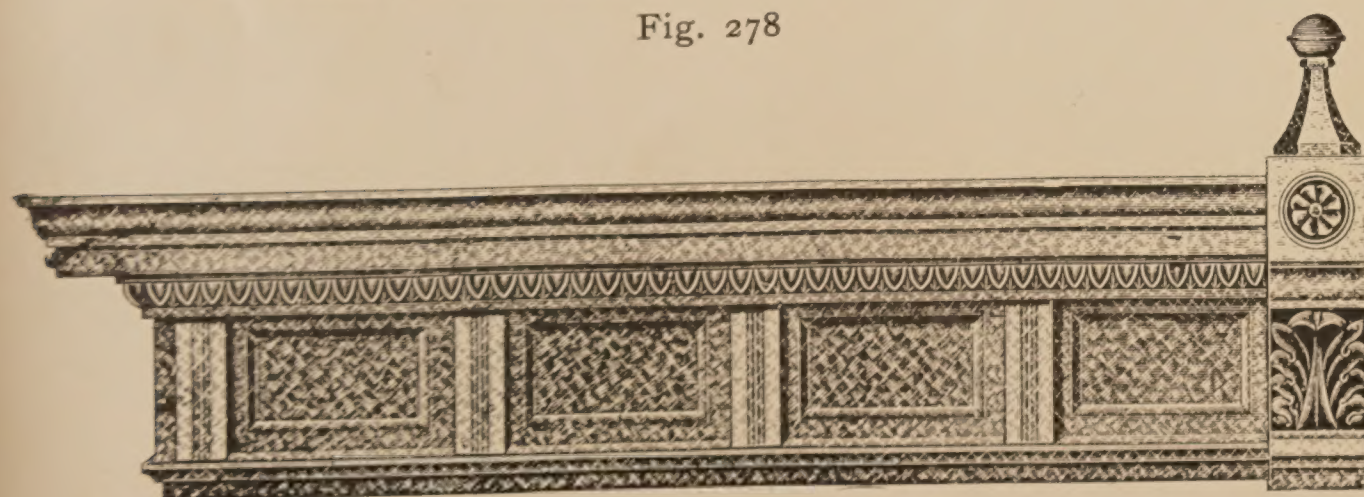
CORNICES AND FINIALS

Fig. 275



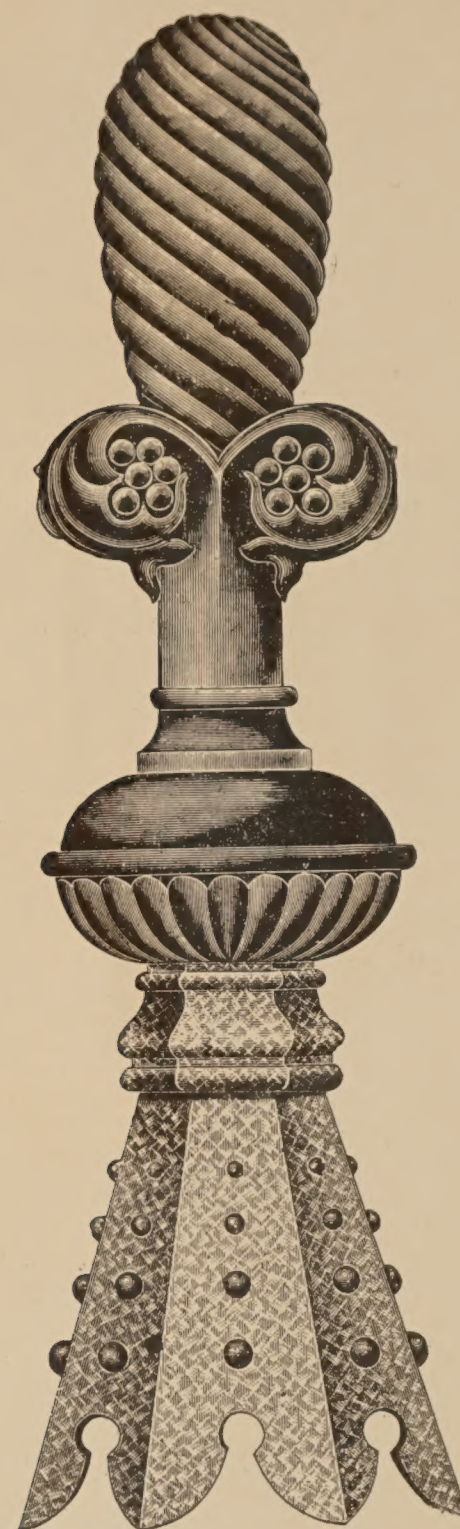
Height, 6 feet. \$25.00.
Height, 8 feet. \$27.50.
Height, 10 feet. \$30.00.

Fig. 278



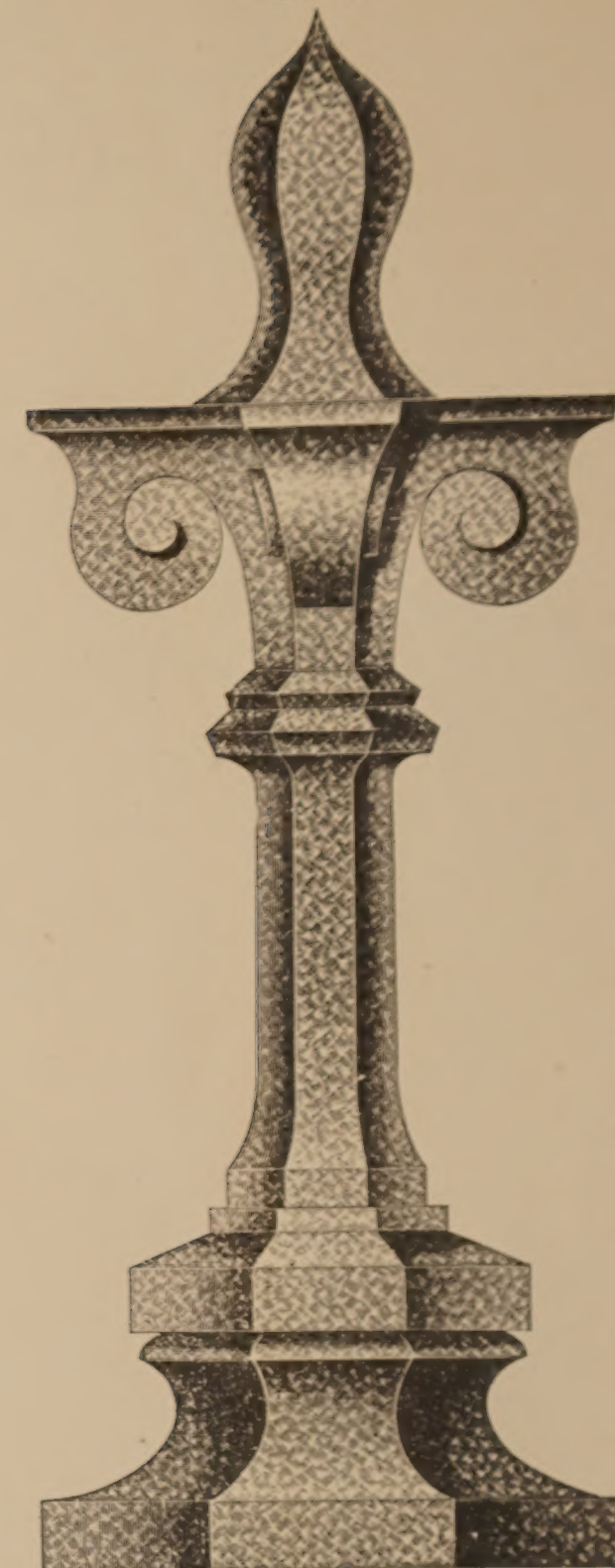
Height, 40 in. Projection, 22 in. Price, per foot, \$1.75.
Trusses, each, including Urn.....\$6.00.

Fig. 276



Height, 7½ feet.
Price, \$20.00.

Fig. 277



Height, 6 feet. \$25.00.
Height, 8 feet. \$27.50.
Height, 10 feet. \$30.00.

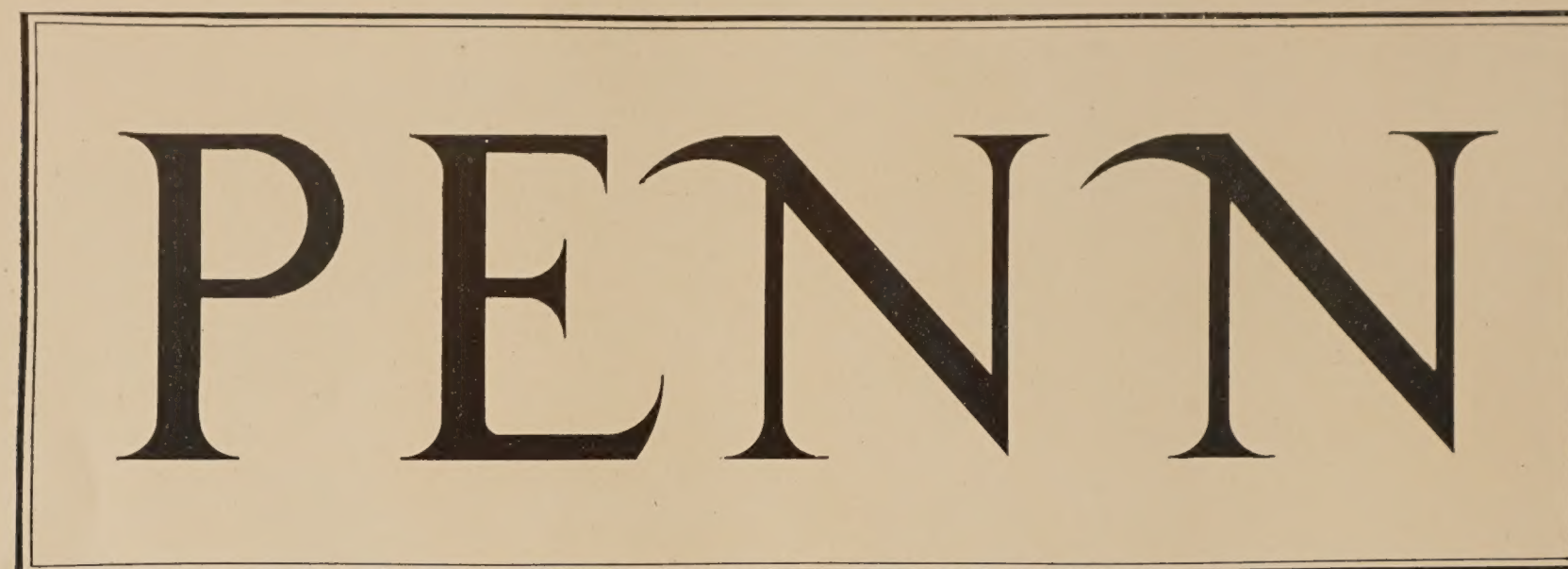
Fig. 279



Height, 26 in. Projection, 15 in. Price, per lineal foot, 90 cts.
End Trusses\$3.50 each.

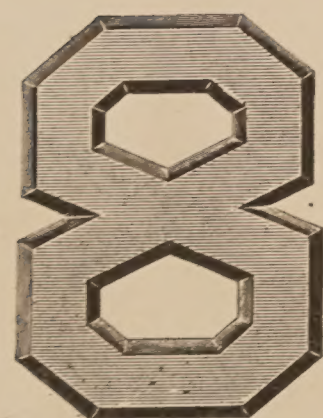
ARCHITECTURAL LETTERS

Fig. 280



12 inches, per letter, \$2.50.
8 inches, per letter, \$2.00.
6 inches, per letter, \$1.50.

Fig. 281



Size, 6 inches, 75 cents each.
Size, 12 inches, \$1.25 each.

Fig. 282



Size, 6 inches, 75 cents each.
Size, 12 inches, \$1.25 each.

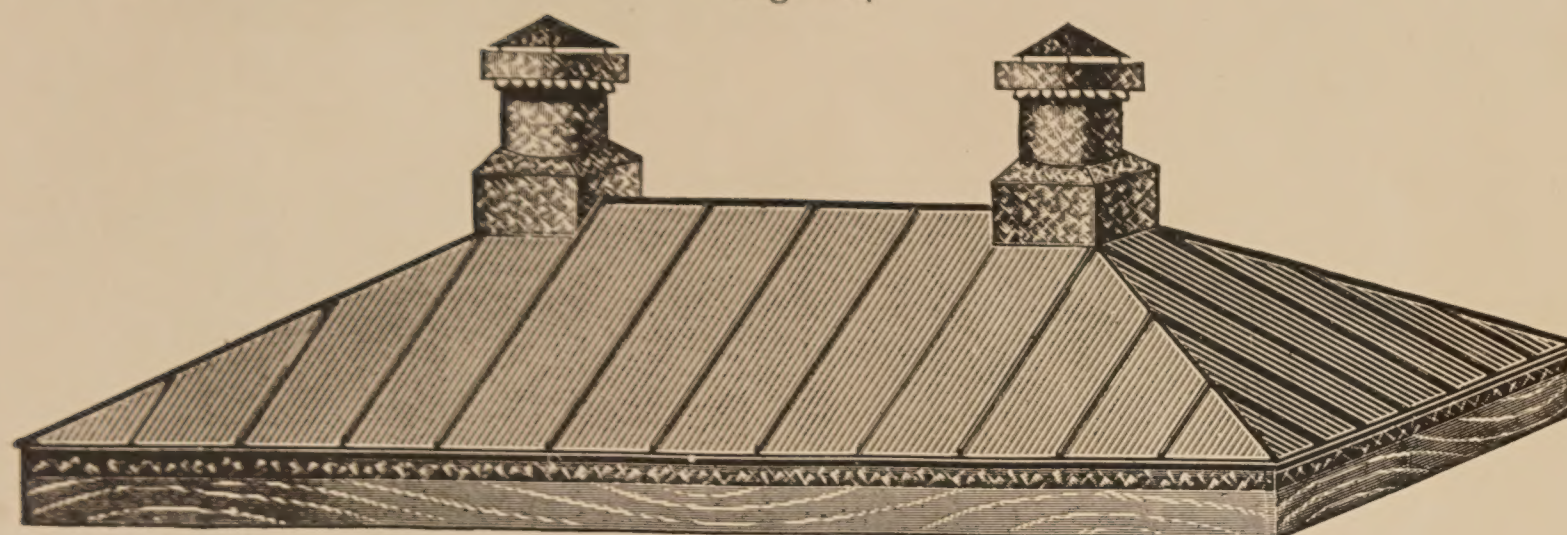
Fig. 283



Size, 6 inches, 75 cents each.
Size, 12 inches, \$1.25 each.

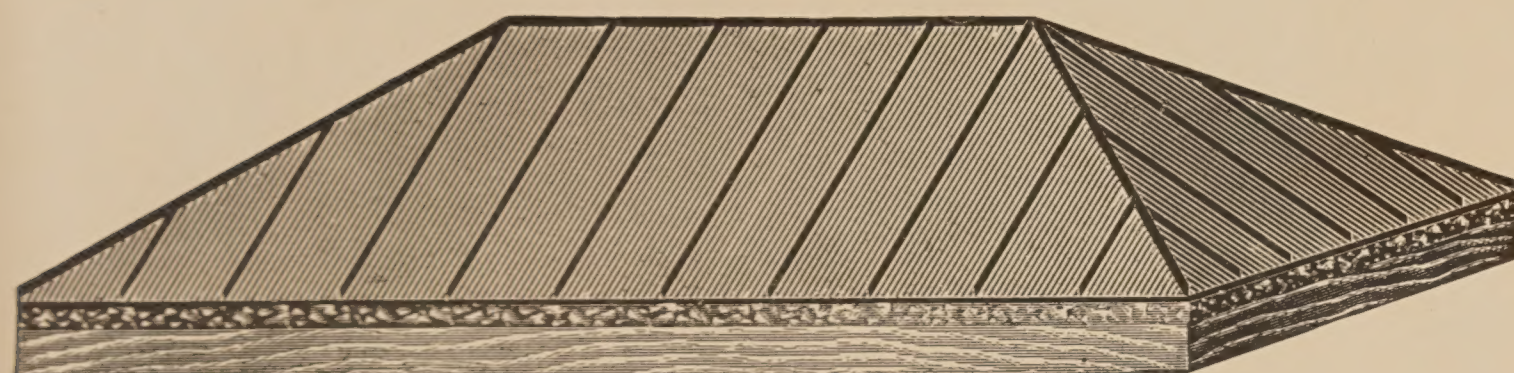
GALVANIZED SKYLIGHTS

Fig. 284



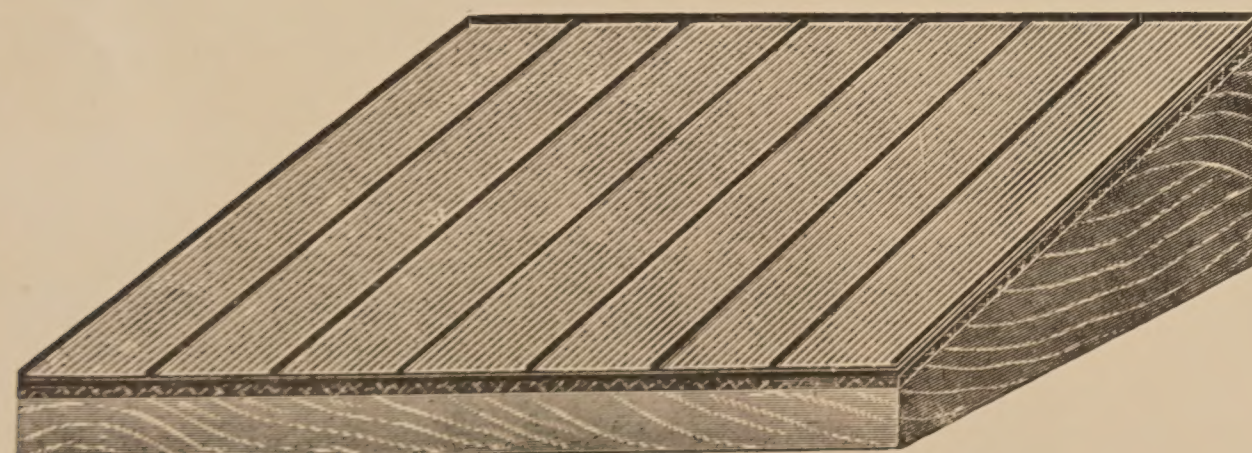
Four Hipped with Top Ventilator.

Fig. 285



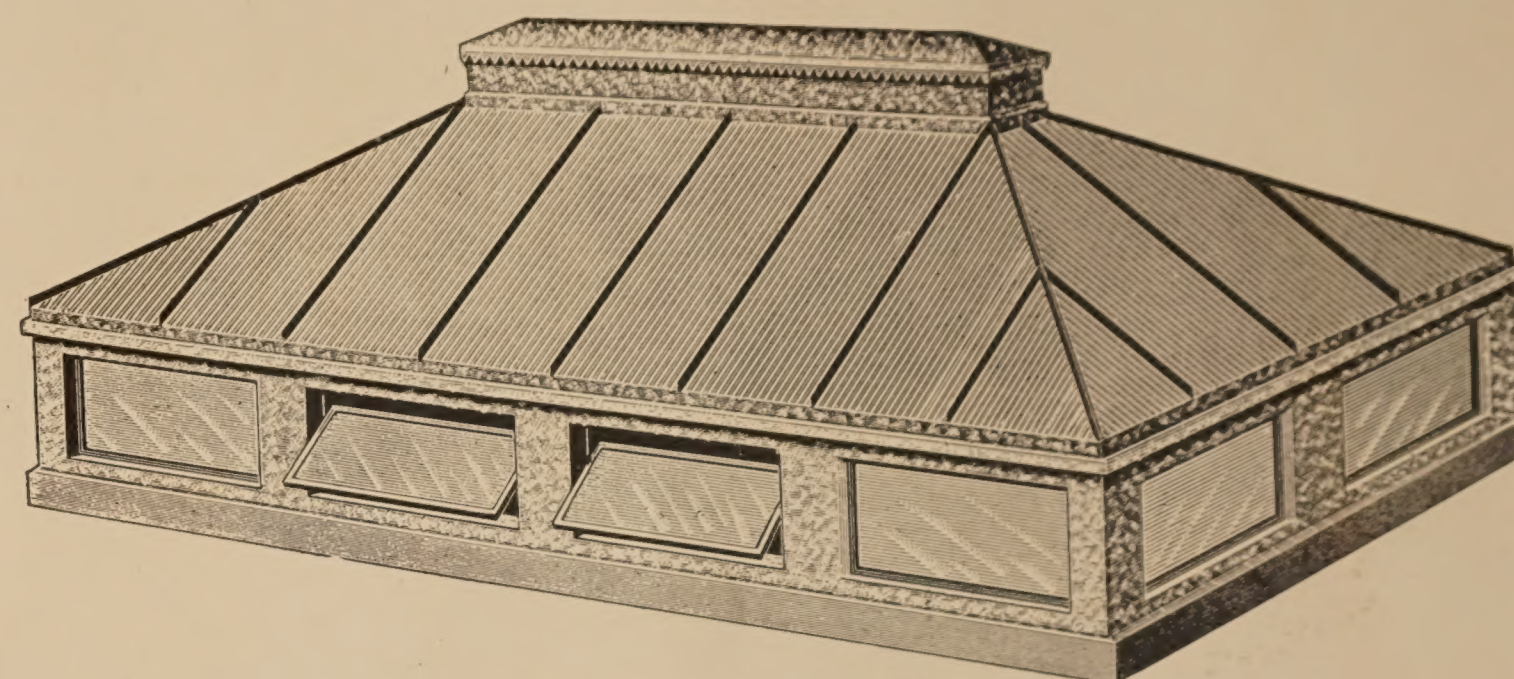
Four Hipped.

Fig. 286



Single Pitch.

Fig. 287



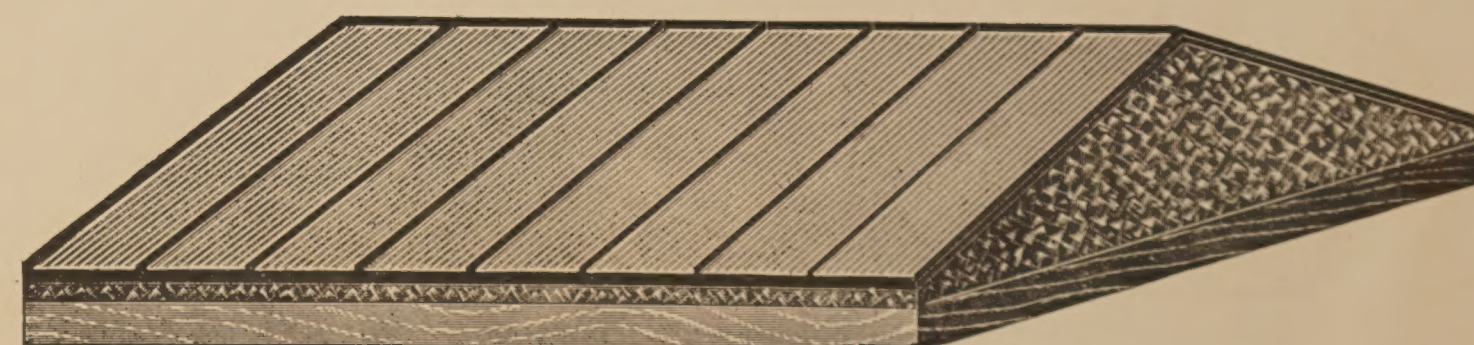
Four Hipped with swinging sash and chain.

Fig. 288



Four Hipped with Levers.

Fig. 289



Double Hipped.

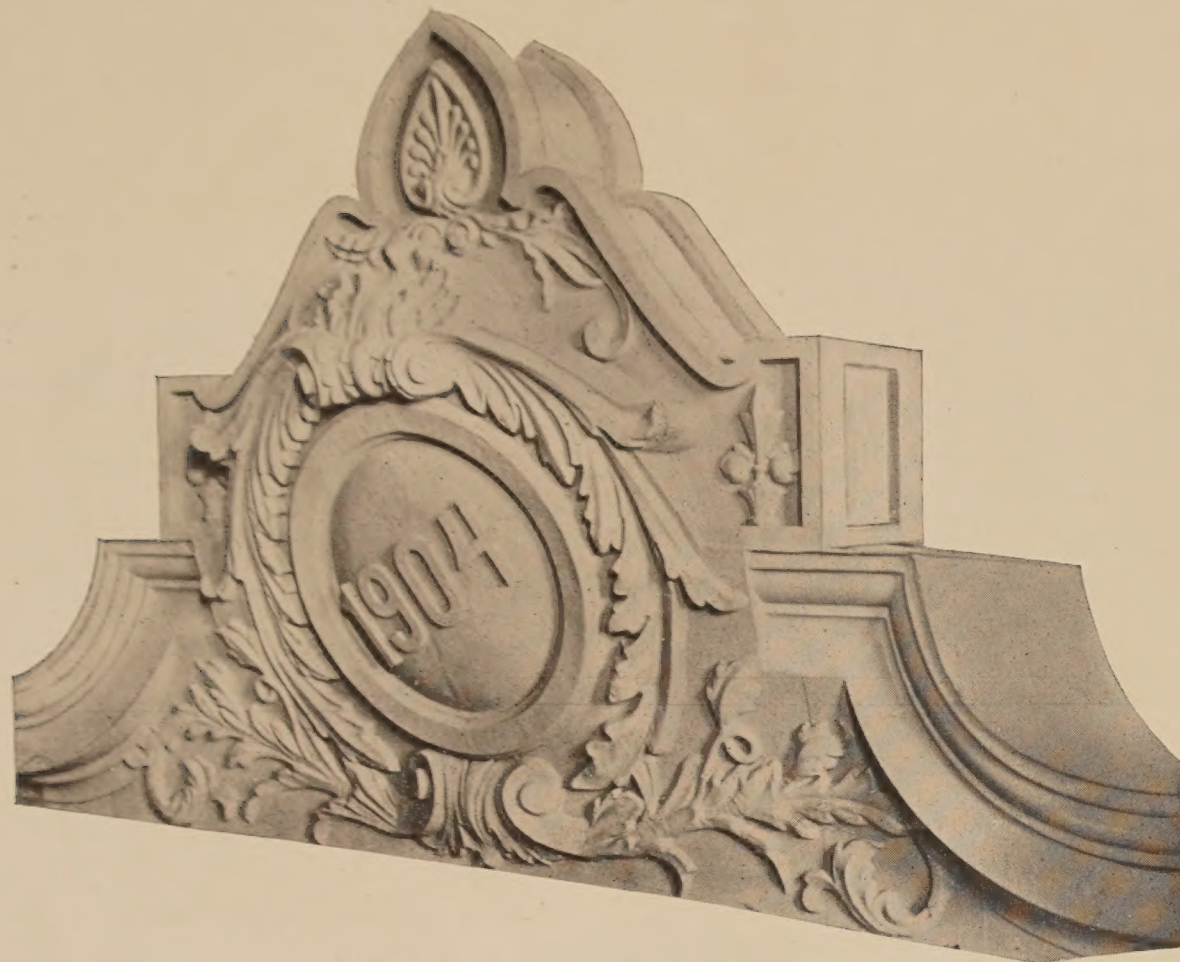
Prices given when details and specifications are furnished.

GALVANIZED WINDOW and DOOR CAPS

All List Prices for Window and Door Caps are based on openings 32 to 42 inches in width between jambs of openings. In ordering, always state the distance between jambs and how much the frames are recessed from face of wall.

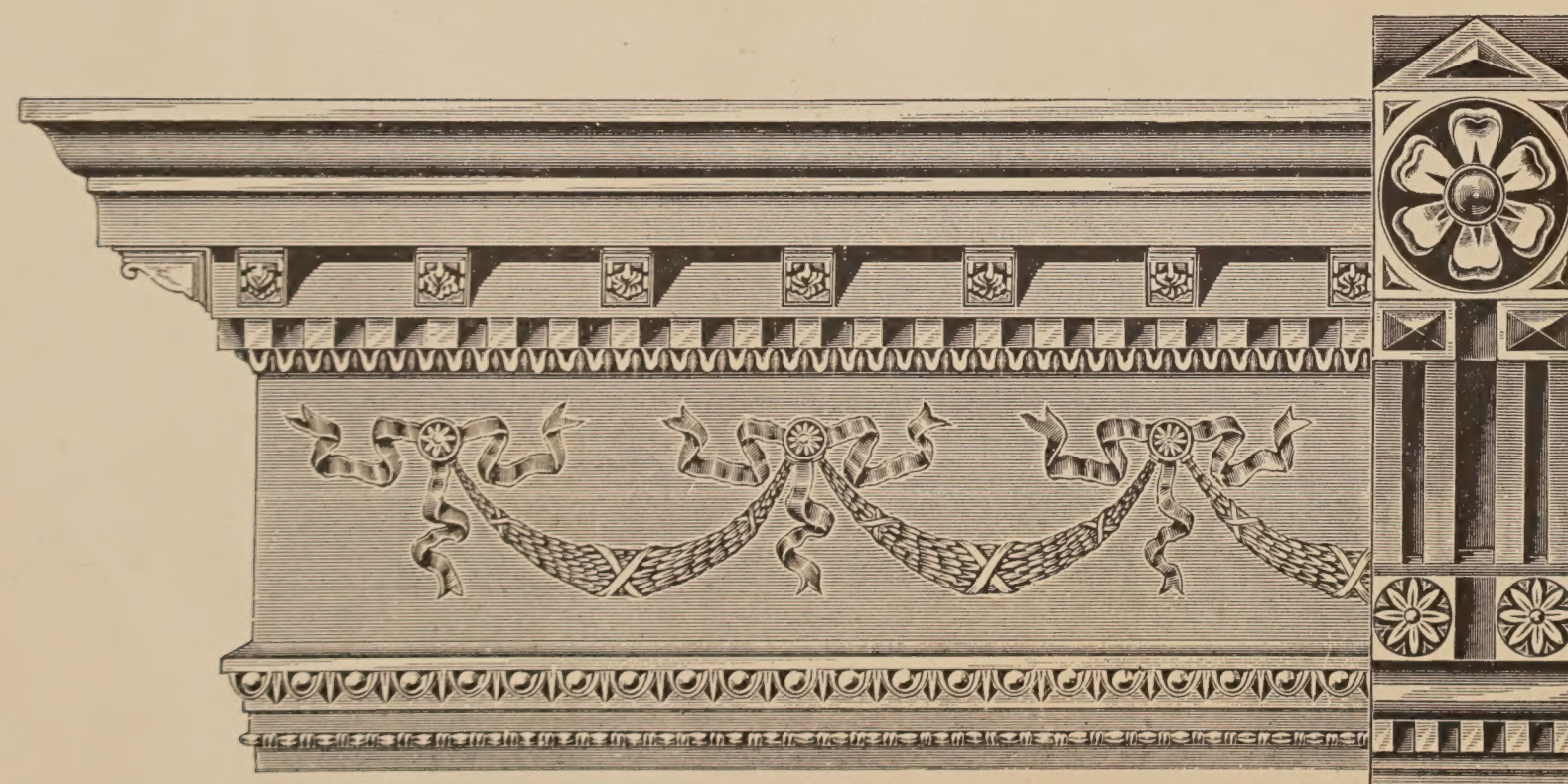
All Corbels are made 4 inches wide, unless otherwise specified. Crating Charged for at cost.

Fig. 290



Prices on application.
Special Galvanized and Zinc Pediment.

Fig. 291



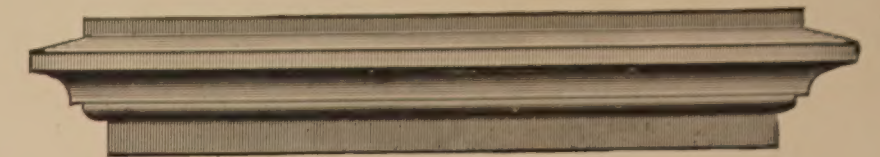
Height, 44 inches. Projection, 20 inches. Price, per lineal foot, \$4.50. End Trusses, \$5.25. Mitres, \$3.50 each.

Fig. 292



Shows Corner Block Ornamented, 4 sizes. Used with Cornice, Fig. 226.
18-in. height, 8-in. face, each...\$4.75
30 " 10 " " ... 5.95
34 " 12 " " ... 6.25

Fig. 293



Price, \$2.00 each.

Fig. 294



Price, \$2.40 each.

Fig. 295



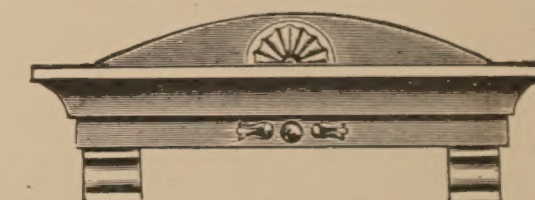
Price, \$5.75 each.

Fig. 296



Price, \$4.25 each.

Fig. 297



Price, \$3.75 each.

Fig. 298



Double window cap (arched), \$9.50 each. Height from top of egg and dart to bottom of block, 13 inches. Length, 7 feet by 4 inches from outside to outside.

ZINC ORNAMENTS AND MOULDINGS FOR CORNICE WORK

FANCY FINIALS FOR LARGE OR SMALL TOWERS



Fig. 299

Dia., 4 in.
Height, 18 in.

Fig. 300

Dia., 7 in.
Height, 2 ft. 8 in.

Fig. 301

Dia., 4 in.
Height, 12 in.
Price, each

Fig. 363.	Height, 17 in.;	dia. bulb, 4 in.	\$3.00
" 361,	" 24 "	" 5 "	4.50
" 362,	" 40 "	" 7 "	6.75

Made from stamped zinc, and mounted on base of any shape or size.
(Extra charge for base.)

For Fancy Finials and Ridgings, see pages 40 to 43.

Fig. 302



8 inches. Per foot, 42 cts.

Fig. 303



6 1/4 inches. Per foot, 40 cts.

Fig. 304



6 1/2 inches. Per foot, 30 cts.

Fig. 305



2 inches. Per foot, 7 1/2 cts.

Fig. 310



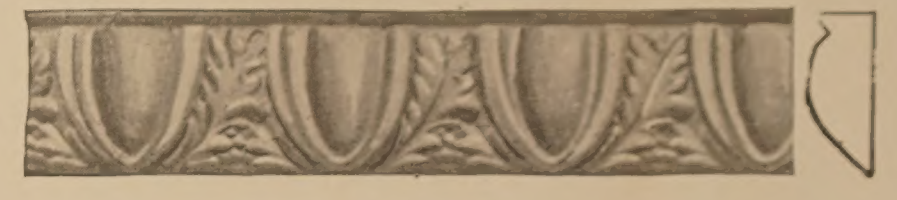
16 x 24 inches. \$2.00.

Fig. 307



6 1/2 inches. Per foot, 40 cts.

Fig. 308



6 inches. Per foot, 37 cts.

Fig. 309



5 1/4 inches. Per foot, 40 cts.

Fig. 306



8 1/2 x 28 inches. \$1.20.

WOODS' STEEL CORNER

For Plaster Walls, and some reasons why you need it in your business



The Architect

Adds stability and attractiveness to corners.
Procures a neat miter at wainscotting.
Has a good mortar key.
Is made of heavy galvanized steel.
Is fire proof.

The Plasterer

It guides the trowel and renders corner making easy and rapid.
It adjusts itself to inequalities of lath laying and brick work.
It can be used on certain curved work and cheapens the process of curving.

It is made in convenient lengths, but can easily be cut in shorter sections.

It is packed carefully and securely so as to keep it in shape until ready for use.

It makes a better job for your customer.

In a General Way

It strengthens and makes a straight corner.
It prevents wrinkled paper.
It is the most practical, cheapest, best.
It can be used in the greatest variety of work.
It is as strong as steel will make it.
It saves future expense repairing broken corners.

Fig. 313



Sample and booklet giving further information and price sent on request.

It is the lightest, strongest, cheapest, best.

It prevents wrinkled paper.

It strengthens and makes a straight corner.

It saves the expense of repairing broken corners.

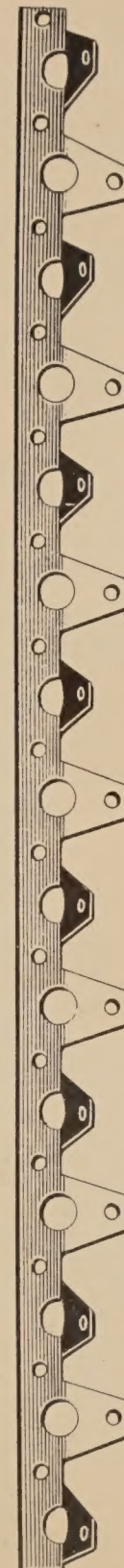


Fig. 311



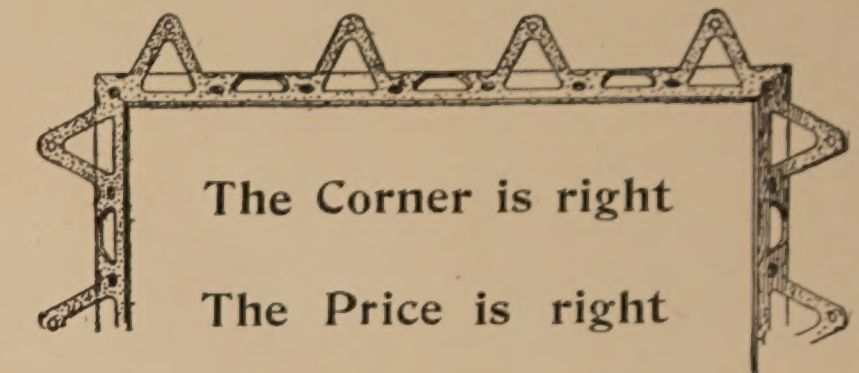
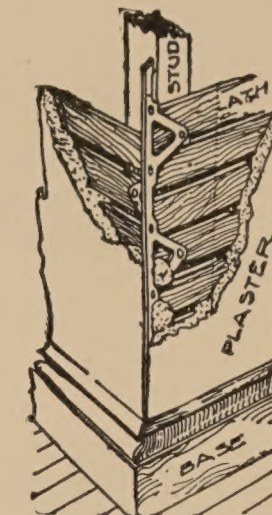
1. Your business has to do with buildings.
2. Buildings, most of them, have plaster walls.
3. Plaster walls usually have some projecting corners.
4. Projecting plaster corners, to remain perfect, require a metal corner bead.
5. Of metal corner beads, the best and least expensive is the

Woods' STEEL Corner For Plaster Walls

Just Around the Corner

is where Woods' Steel Corner gets in its work. It is a patent Steel device that is nailed to lath, is imbedded in the plaster of projecting corners and prevents them chipping. This is the weakest part of every wall; Woods' Steel Corners make it the strongest part. It straddles the corner and makes a complete union of the connecting surfaces. It produces a perfectly straight, substantial corner, which can be decorated or papered over without marring the decoration or wrinkling the paper.

Fig. 312



4 cents per foot. Discount for large quantities.

Use it and satisfy yourself.

Use it and satisfy your customer.

Use it and satisfy us.

You're always doing the straight thing when you're using Woods' Steel Corners.

Prospective Builders

should know

Woods' STEEL Corner

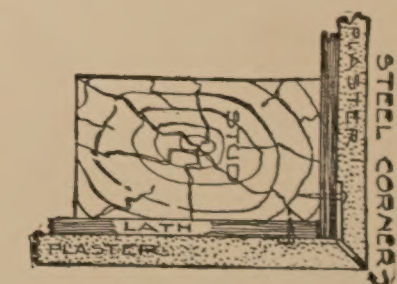
For Plaster Walls

It is a patent steel device that is nailed to lath, is imbedded in the plaster of projecting corners and prevents them chipping.

It straddles the corner and makes a complete union of the two connecting surfaces. It produces a perfectly straight, substantial corner, which can be decorated or papered over without marring the decoration or wrinkling the paper. Protection of some kind is required at corners, and the wooden bead used heretofore has been the only, though unsatisfactory, method.

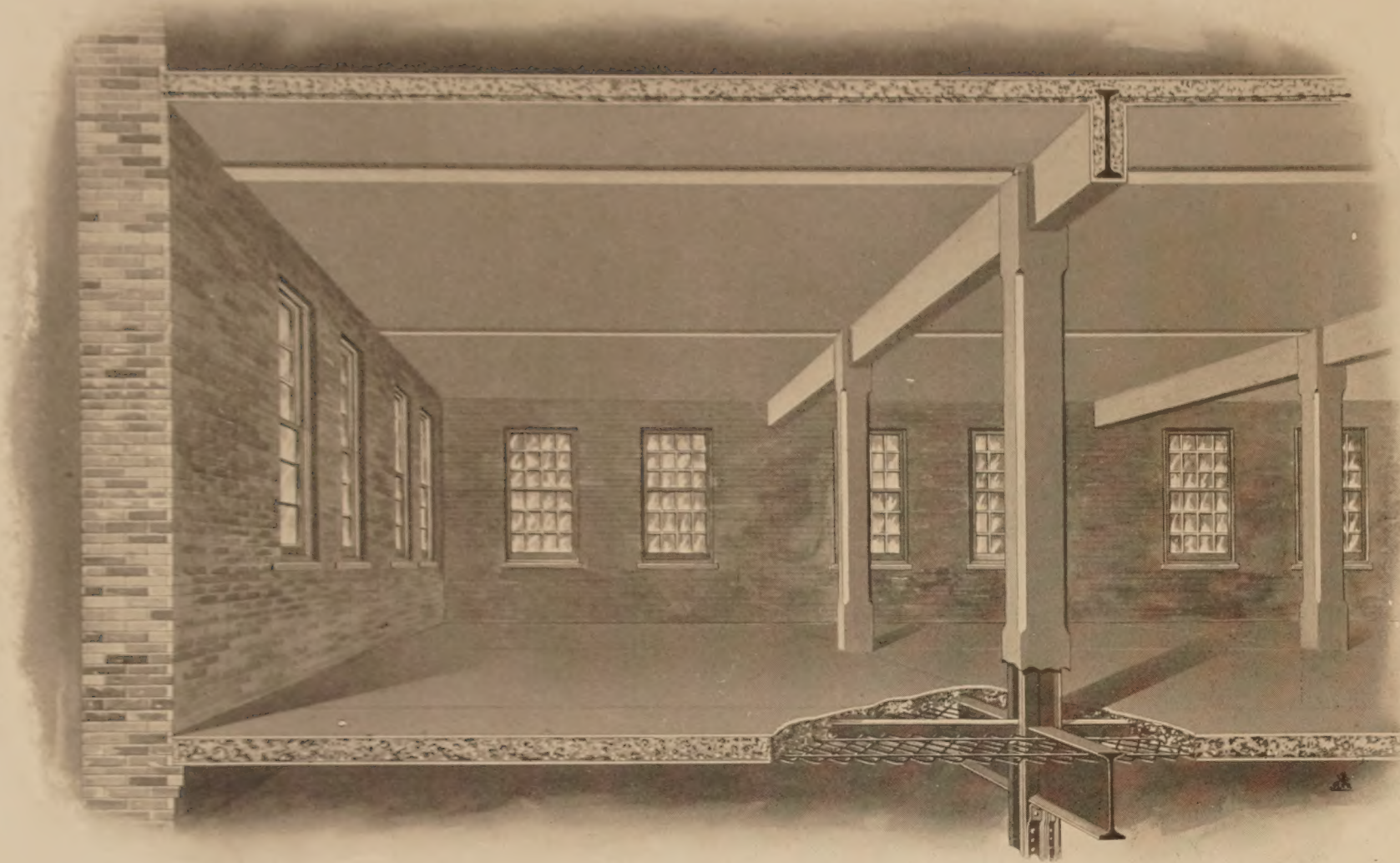
The Woods' Steel Corner method is an improvement which readily appeals to the practical builder and owner.

Get your Architect to specify it
Plasterer to use it



METAL LATH

Fig. 314

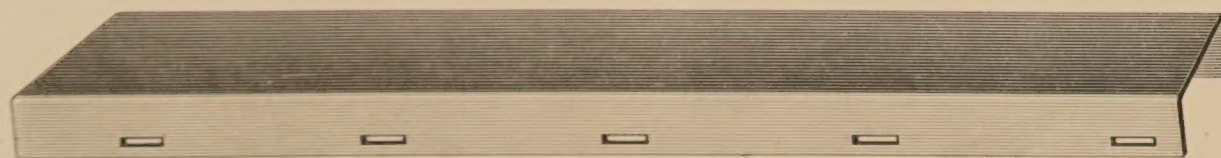


METAL LATH AND MORTAR FINISH. STRICTLY FIRE PROOF

Sketch of a building with the floors installed and the beams and columns encased in concrete. The sketch as it stands is suitable for warehouse construction and the ceilings can be finished very suitably with a coat of whitewash. For a better structure, such as a hotel or office building, the same construction would be used with beams and columns hidden in the lines of the partitions.

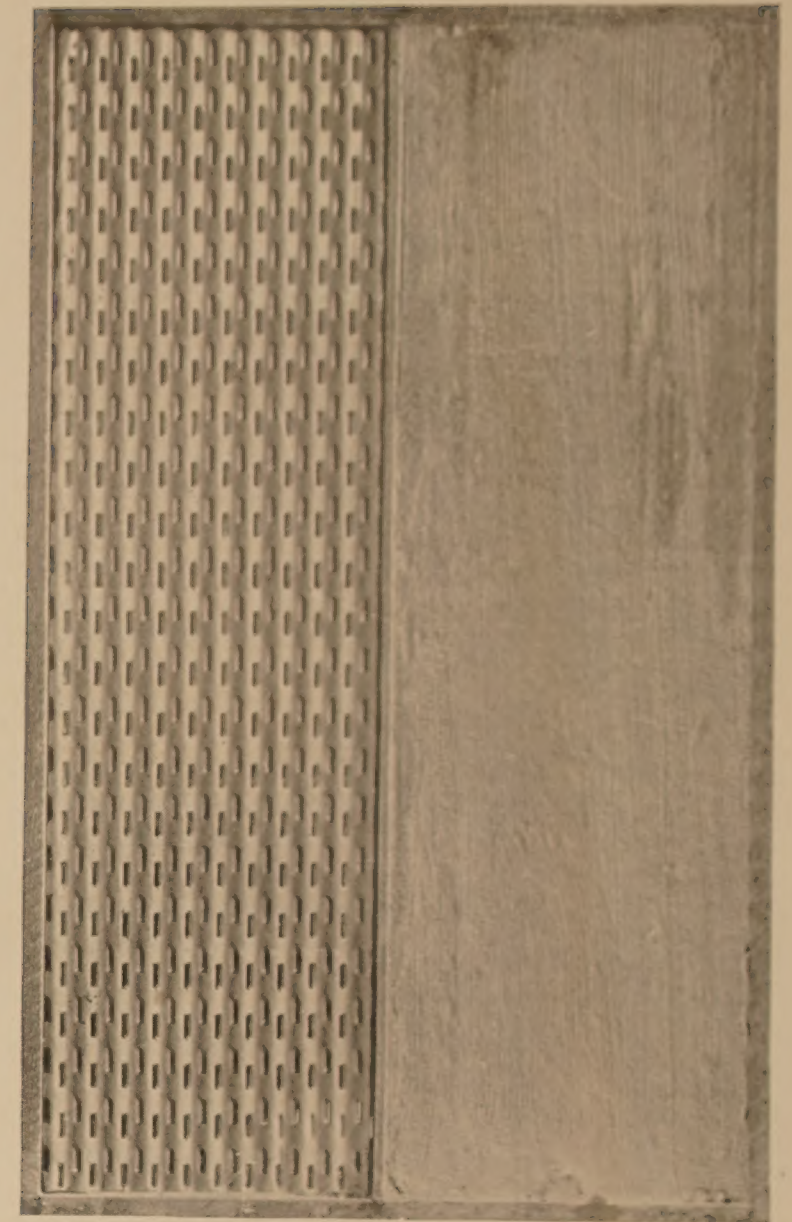
This also represents two different methods of supporting the floor on the walls by a bearing two inches wide, either by a recess or corbel.

Fig. 315



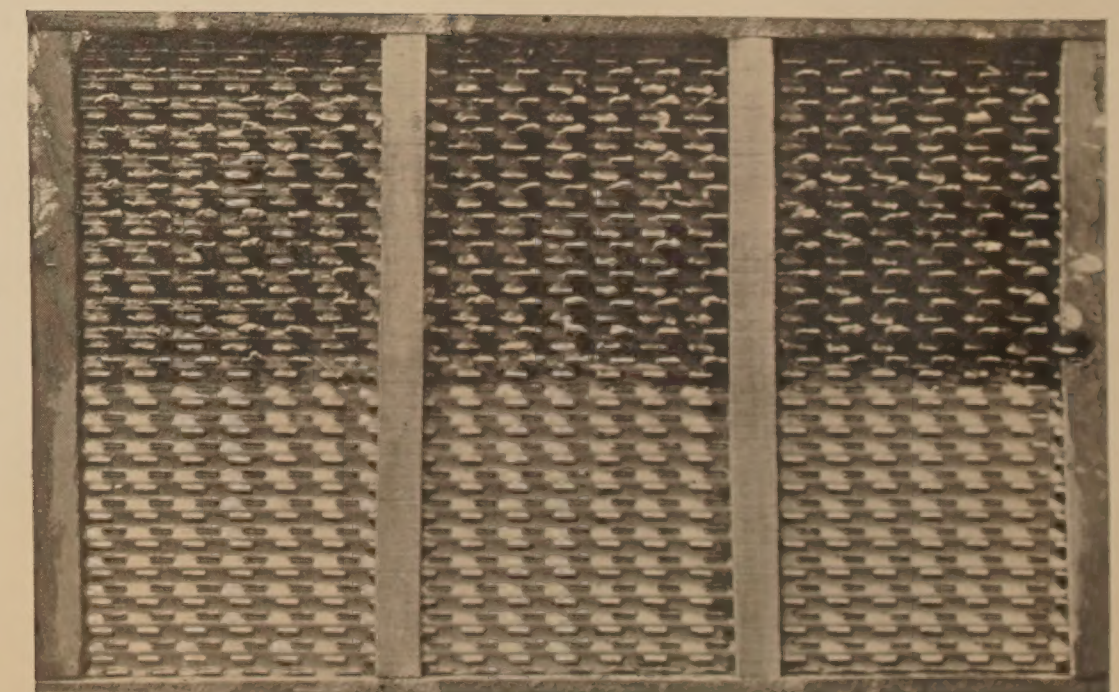
Metal Stud, for partitions, 2 inches, 3 inches, 4 inches.
No. 20 Gauge Steel.

Fig. 316
Lath Face. Mortar Finish.



Shows face of plaster and lath side to apply mortar.

Fig. 317



Shows mortar keying device, reversed side, next to studding.

PENN CO. SHEET LATH

METAL LATH AND CORNER BEAD

Fig. 318

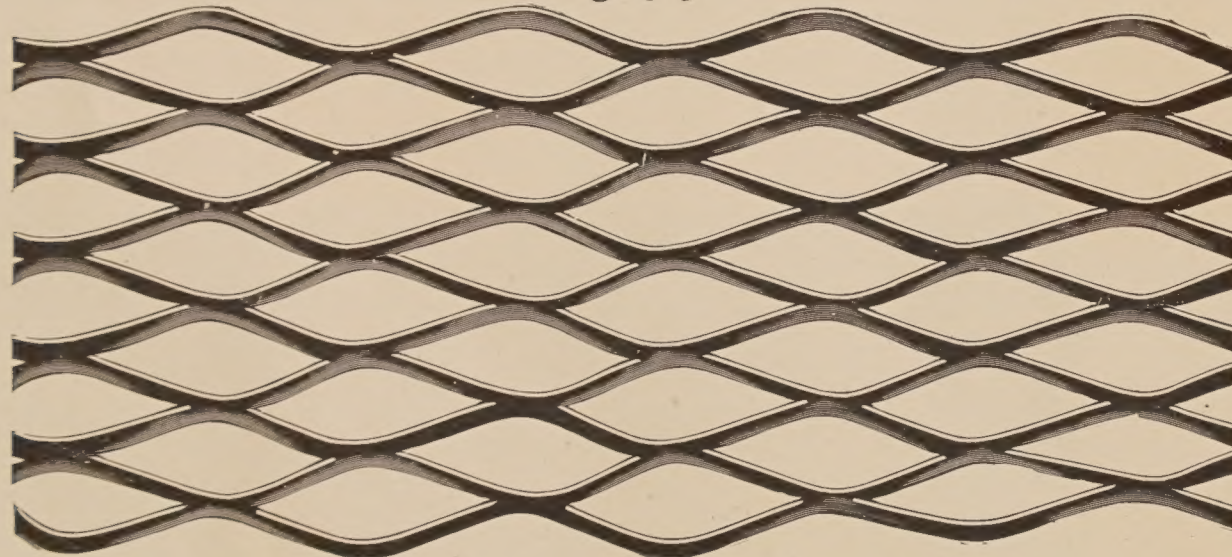


PENN SHEET LATH

Sheets 24 inches by 96 inches, made in No. 29, 28, 27 Gauge Steel, for plaster walls and ceilings. The strongest lath on the market. Reversible. Can be plastered on either side.

Forms a perfect key for the mortar. Requires one-half the amount of mortar of other laths.

Fig. 319



EXPANDED METAL LATH

Sheets 18 inches by 96 inches, made in No. 24, 25, 26, 27 Gauge Steel. The most practical and economical lath on the market, owing —

To the ease and rapidity with which it can be applied.

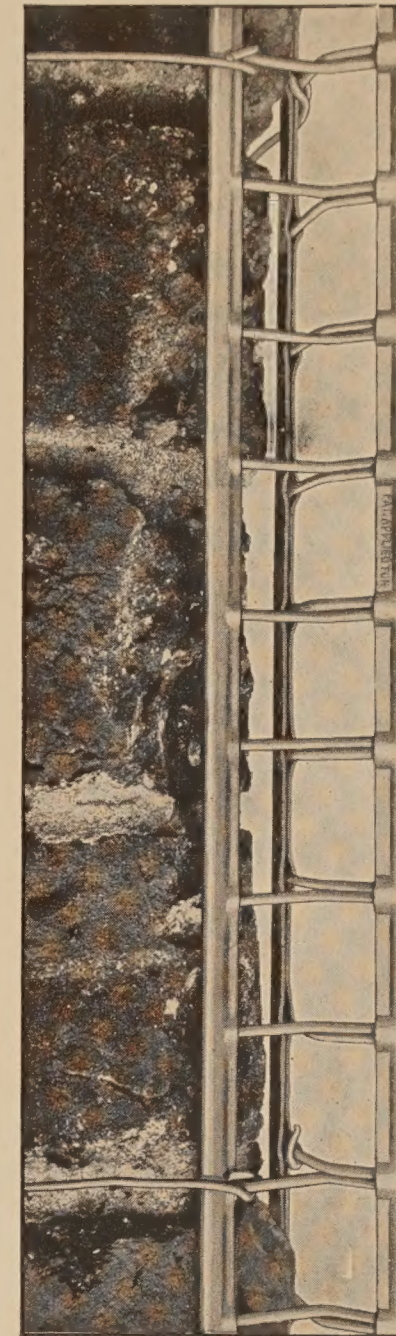
To its perfect rigidity when in position.

To the small mesh, which assures no waste of mortar.

To its comparatively low cost.

And to the unexcelled "key" which it offers to the mortar. Our Expanded Metal Lath becomes a part of the wall, not a background for it.

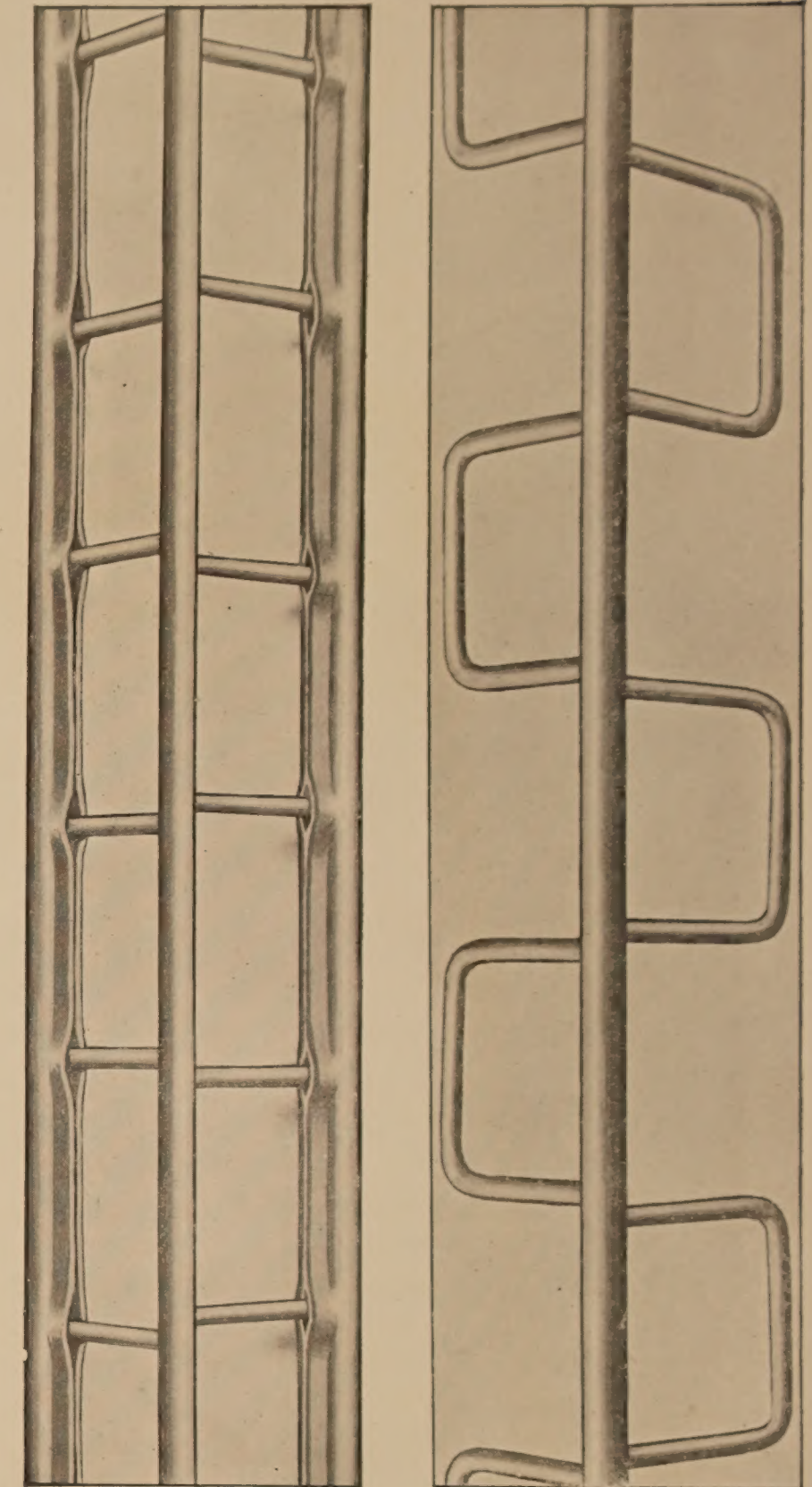
Fig. 320



HALF SIZE

No. 1 Hunt Steel Corner Bead, designed for heavy work. A long span from one support to another may be made, and yet maintain the desired stiffness. Two feet or more of poor walls may be spanned in this manner as firm as the corner itself.

Fig. 321



No. 1. Full Size.

No. 2. Full Size.

The two styles of Hunt Steel Corner Bead, Nos. 1 and 2. Easily and permanently attached to bricks, metal or wood lathing. The perfect corner bead.

SAGENDORPH'S METAL TILE OR SHINGLES, WITH LIP AND BEAD LOCK

PAINTED STEEL, TIN OR GALVANIZED MATERIAL. (COPPER WHEN DESIRED)

EMBOSSED METAL TILE

Fig. 322



Blanks, 14 x 20 inches.
Cover to weather, 12¼ x 18 inches.
No. tile to cover, 100 sq. feet., 64.

Fig. 323



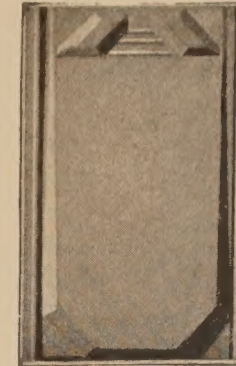
Blank, 10 x 14 inches.
Cover to weather, 8¼ x 12 inches.
No. tile to cover 100 sq. ft., 141.

Fig. 324



Blank, 7 x 10 inches.
Cover to weather, 5¾ x 8½ inches.
No. tile to cover 100 sq. ft., 297.

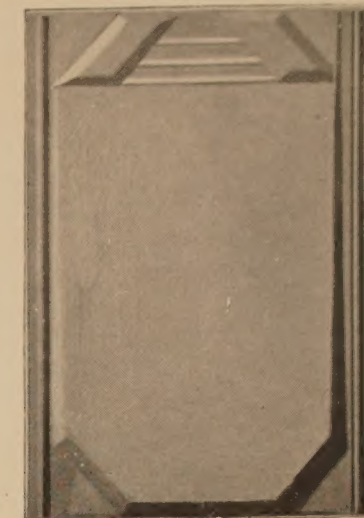
Fig. 326



Blank, 7 x 10 inches.
Cover to weather, 5¾ x 8½ inches.

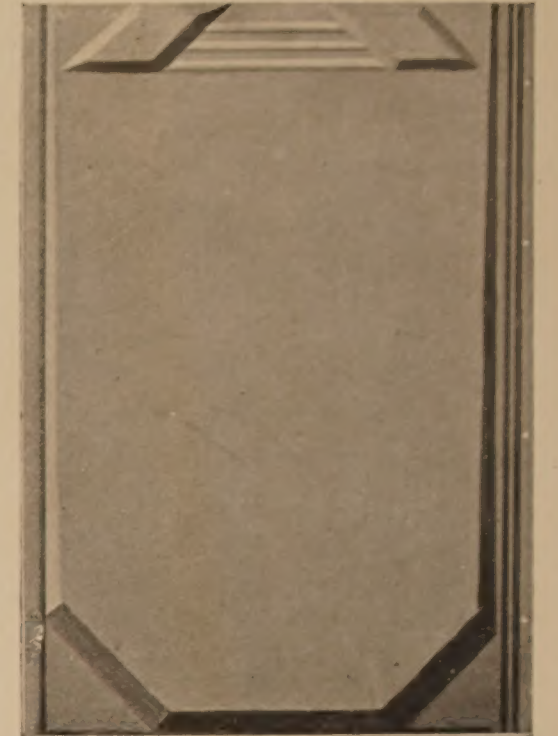
PLAIN METAL TILE

Fig. 327



Blank, 10 x 14 inches.
Cover to weather, 8¼ x 12 inches.
No. tile to cover 100 sq. ft., 141.

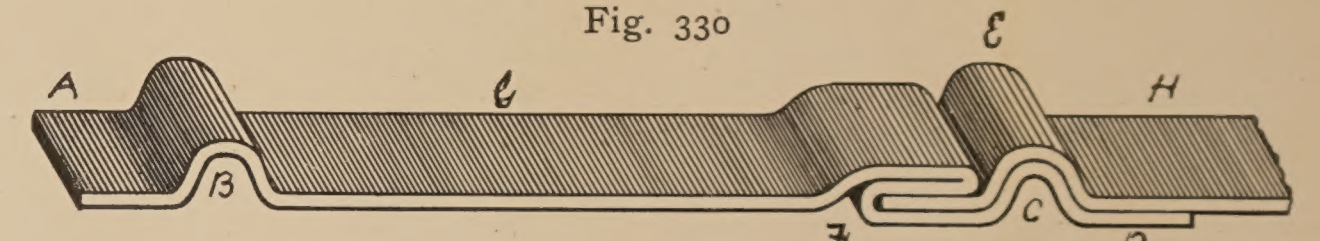
Fig. 328



Blank, 14 x 20 inches.
Cover to weather, 12¼ x 18 inches.
No. tile to cover, 120 sq. ft., 64.

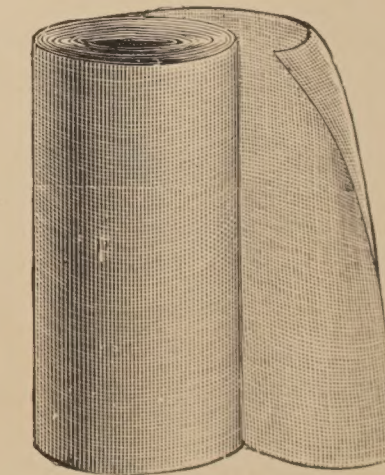
OUR BEAD LOCK JOINT

Fig. 330

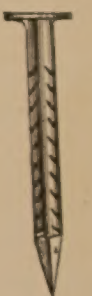


A, lock lip. B, locking top bead. C, under locking bead. D, nailing flange. E, double bead lock. F, locking lip and loop keeper. G and H, tile proper.

Fig. 329

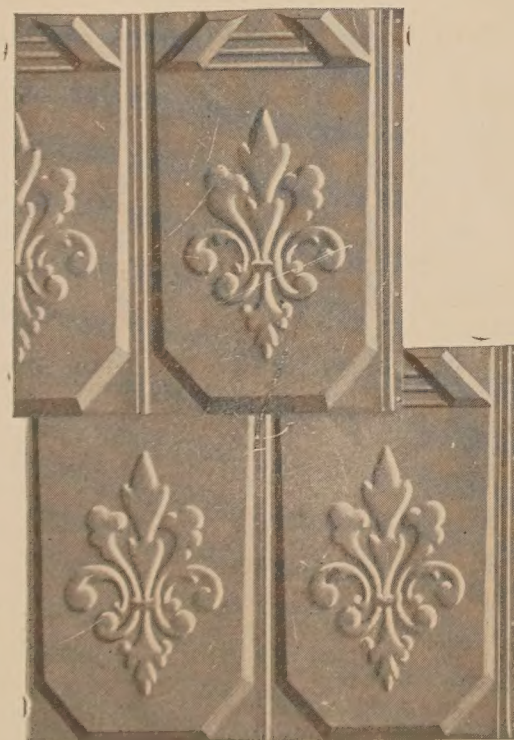


For lining valleys or gutters.
Made from painted steel,
galvanized or tin.
In rolls, 1 to 100 feet long.
Width, 6 inches to 28 inches.



1 inch.
Wire Nail.

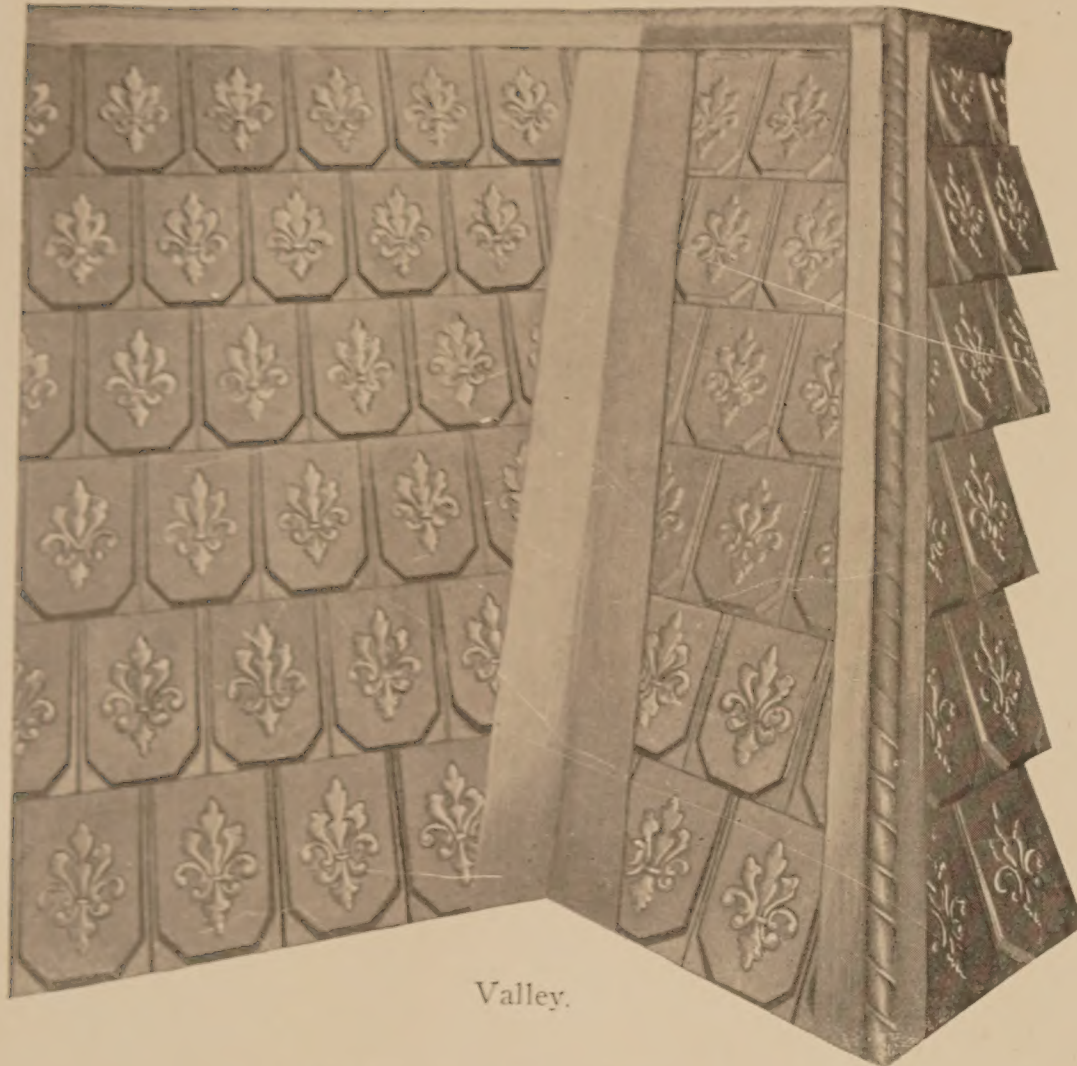
Fig. 325



Letter OX, Waterproof Group of metal shingles, showing method of laying
Cross Lap of Tile.

SHINGLES

Fig. 331



Valley.

Shows hip and valley finish.

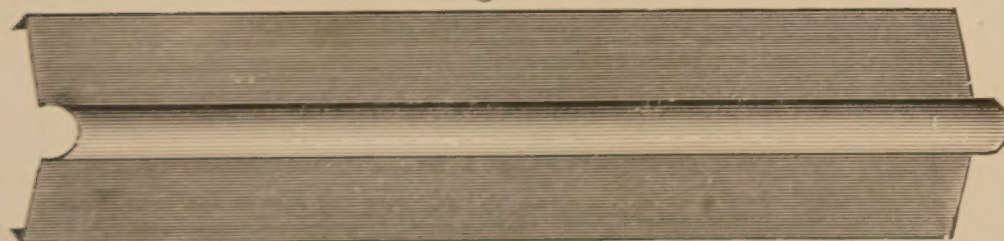
Hip.

Fig. 30



Metal Combing Cap, special, made from 6 to 8 inch stock. First flange, $\frac{1}{2}$ inch; second flange, $1\frac{1}{2}$ to $2\frac{1}{2}$ inches, oval centre. Diameter, 1 inch.

Fig. 28



Metal Combing Cap, medium, made from 12 and 14 inch stock. First flange, 1 inch; second flange, 3 and 4 inches, oval centre. Diameter, $1\frac{1}{2}$ to 2 inches.

Fig. 332



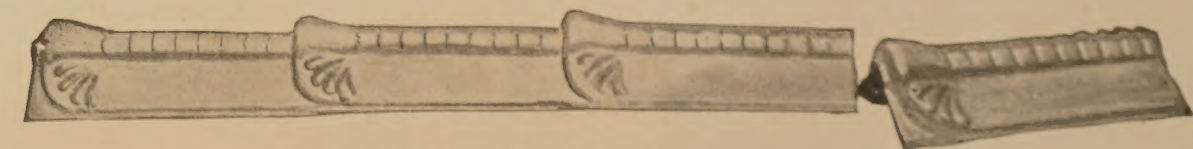
Signal Tower, Boston and Maine Railroad Co.

Fig. 213



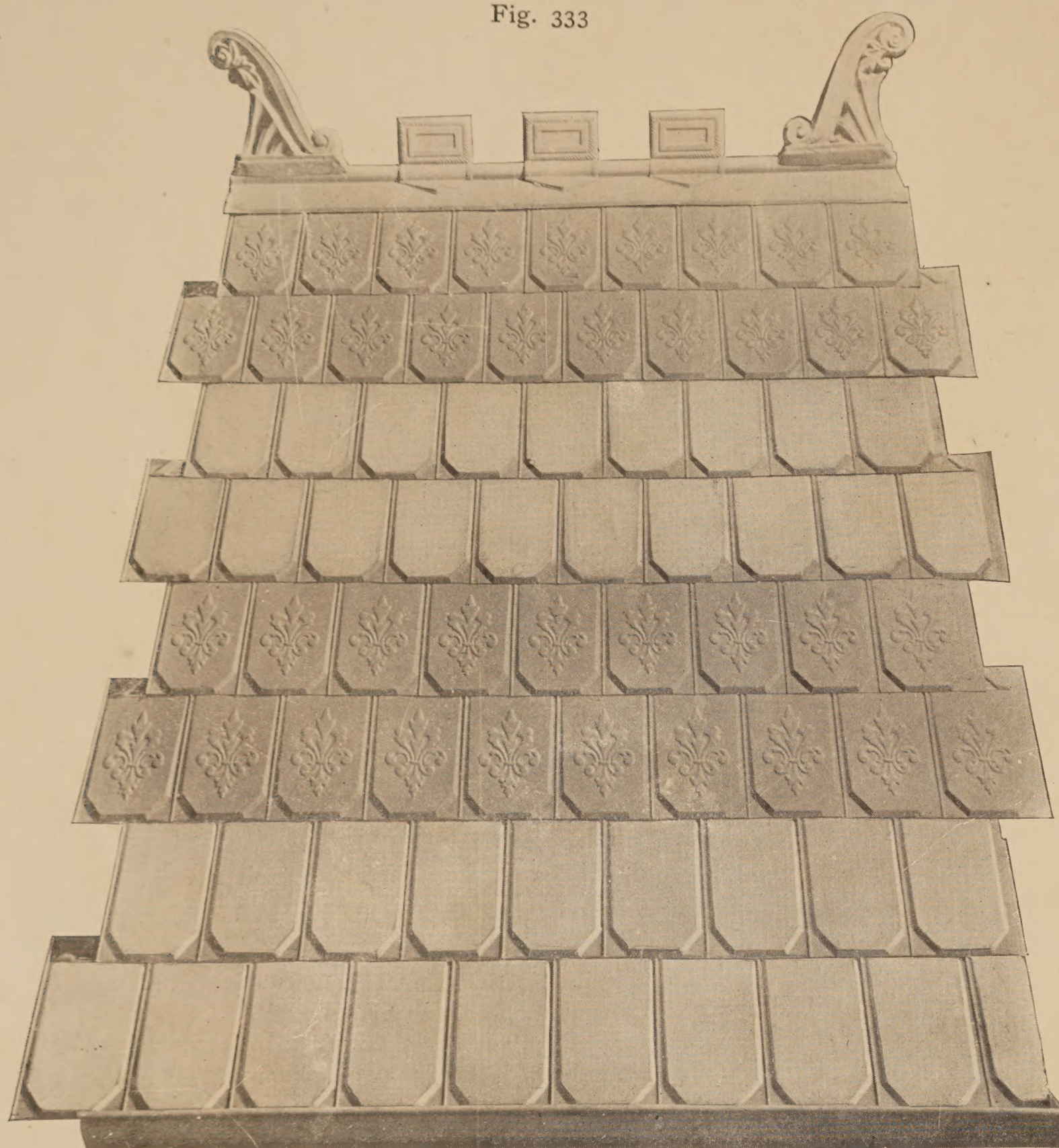
Rope Mould, Ridging. Girth, $8\frac{1}{2}$ inches. Rope roll, $2\frac{1}{4}$ inches diameter.

Fig. 218



Japanese Hip. Each section covers 12 inches. Made from painted steel, tin, galvanized or copper. Any of the above ridging made from painted steel, tin, galvanized or copper.

Fig. 333



Shows plain and embossed tile, also fancy ridging and finials. For ridging, all styles, see pages 40 to 43.

GENERAL DIRECTIONS FOR LAYING METAL SHINGLES.

Begin at the lower left hand corner of the roof. See that your shingles are straight with the eaves of the building. Let your first course project over the eaves about one inch or so. Strike chalk line across roof and lay to this line.

After the first shingle of your course is laid and nailed, the second shingle must be held rather upright, until the hook along its left hand edge has caught under the fold and into the bead of the lock of the right hand edge of the shingle already laid. The second shingle must then be brought

down to its place upon the roof, even with chalk line, and then pulled to the right until the two beads on the two shingles forming the lock are as tight against each other as is convenient to make them, all the time keeping your courses straight with chalk line, and then nailed. All other shingles are laid in like manner.

At the ends of the building, let the shingles project about one inch over bargeboard, turn them down and nail neatly. In starting the next and subsequent courses, every alternate course will start with a half shingle in order to break joints, as shown in cut, Fig. 333.

The lower edges of shingles of the second and subsequent courses must rest upon the raised bead which runs across each shingle of the course below on a level with the top of the side bead lock, and should fit up against the step just above the bead. This is clearly shown in Fig. 333, page 62. The raised bead (below the top line) at the top of each shingle, being level with the top of the side lock, makes it unnecessary to come to an exact "center" of the shingle below, with the side joints of the upper course to make a weather tight joint; but to give the best appearance on the roof, they should be laid as shown in cuts.

Nail only where indentations are made in the nailing flange for that purpose, except where cutting and fitting is necessary, in which case the good judgment of the workman must be his guide where to nail.

If there be a gutter formed in the roof near the eaves, have the shingles rest upon it about as you would if using wood shingles or stone slate.

(We furnish also, when desired, a neat gable end finish, which is nailed in place after roof is all completed, as above.)

FLASHING, ETC.

In finishing around skylights, dormers, chimneys, etc., turn the shingles up about three inches, and use counter flashing down over their top edges, so as to make a tight job.

If it be a porch or other roof with top edge against a brick wall, use our porch flashing, and insert the shingles exactly the same as at the ridge when our Ridge Capping is used on ridge.

If the wall is frame, the upper edge of the flashing should go under the weatherboards, or be made tight with cement, or in any way which a good workman may devise to make a tight job.

CORNER FINISH.

Our corner finish is exactly like our plain hip covering and is used down the corners of a structure, when the sides of building are covered with our shingles. It is put on in exactly the same manner as the hip covering, and is applied after sides are covered with shingles.

In using the shingles for siding buildings, start your first course with a whole shingle, allowing it to project about an inch past the corner, to be bent around the corner and nailed exactly as described for hip covering, the second course with a half shingle, and so on to the top, the same as on the roof.

NAILS.

Steel barbed wire nails, 1 inch, No. 13, are better and cheaper than any others. We supply them when ordered. See price list.

NOTE.—Always strike chalk line from left to right at eave of roof, and apply the shingle exact to this line across the roof. Repeat this until ridge of roof is reached. (To omit this, difficulty will follow.)

Fig. 333 shows manner of applying to mansard or double pitch roof, using embossed and plain tile in double rows, if desired, or all of one style.

